hey say that a picture paints a thousand words, and for a medical writer, that sounds like a no-brainer for efficient working. Nevertheless, despite the relatively recent introduction of concepts such as infographics, graphical abstracts, and graphic medicine in the world of medical communications, the written word remains king. But if the fundamental goal of medical communications is to promote understanding of medical science in as many people as possible, whatever their background, is the visual content format underused?

Picture the scene. It’s silly season, the office is empty (even “From the Horse’s Mouth” is on holiday), and your MEW Vet Section editor has just finished reading the excellent “Comics aren’t just for kids”, a recent article in this publication by Era Mae Ferron. And she is inspired! She has been toying with the idea of doing graphic-novel-style medical content for a while, and now she has learned that graphic medicine is a thing!

The following graphic medicine article, “Everything that medical writers need to know about brachycephalic dogs”, is the result of that inspiration. It takes a hot topic from the veterinary world, brachycephalic dog welfare, and is based on my own experience as a veterinary surgeon working with these lovely animals. Whilst creating this article, I reflected on the applications of graphic medicine, or perhaps more accurately “graphic pathography” in medical communications and formulated some thoughts: does this article have more (or less) impact in this form than if the same information had been given in a 1500-word article? And, correspondingly, does this result in improved retention of the key message? Green and Myers have identified patient care, medical education, and the social critique of the medical profession as areas in human medicine where the graphic medicine format can be applied to enhance teaching and patient care. Are there similar applications for veterinary medicine or for medical writing? Or could its use be expanded, for example, to a graphic format of the summary of product characteristics of pharmaceuticals? Finally, and deftly sidestepping the learning style controversy of educational theory, is the benefit (or otherwise) of graphical medicine appreciated by all members of the audience, or will text (or even audio) always be preferred by some?

These are all questions I invite the reader to mull over when viewing this article. Graphic medicine has the potential to enhance understanding of medical information and a growing evidence base will inform medical communication professionals how it is best applied. However, what I can say for sure having completed this project, creating the picture probably takes as long as writing those thousand words.

References
Brachycephalic - or “short head” - is anatomically defined as having a skull width at least 80% of the length.

In 2018, the Kennel Club reported that the French Bulldog had overtaken Golden Retrievers as the UK’s most popular dog breed with a 3000% increase in ownership over the previous decade.

Brachycephaly in veterinary patients, as with humans, predisposes individuals to a range of diseases that can severely impact the animal’s quality of life.

This explosion in the popularity of brachycephalic dogs in many countries has caused alarm amongst veterinarians.

Nevertheless, as well as dogs, brachycephaly is deliberately bred for in numerous domestic species... such as rabbits... ...cats... ...and even horses.
The factors driving this rise in popularity are well described. Furthermore, the photogenic nature of brachycephalic dogs, along with the characteristic charisma of these breeds means they are popular subjects for the social media posts of celebrities and influencers.

Brachycephalic dogs have been over-represented in marketing not only for animal products... but also for products totally unrelated to the pet industry, such as mobile phones and sofas.

Flat-faced dogs are less healthy than their mesocephalic counterparts and are predisposed to diseases that affect multiple body systems:

- Congenital vertebral defects increasing the risk of neurological disease.
- Ocular disease with eyelid malformation and corneal ulceration.
- Crowding of teeth causing severe periodontal disease.
- Skin and ear problems - associated with excessive skin folds and a predisposition for atopic skin disease, ear or otitis.
- Congenital heart hernia with gastro-oesophageal reflux.
- Hemivertebrae increasing the risk of neurological disease.
- Orthopedic disease such as hip dysplasia or patella luxation.
- Reproductive difficulties due to fetopelvic disproportion resulting in a very high caesarian rate.
- Respiratory dysfunction due to obstructive airway disease.
- The facial flattening results in airway stenosis and obstruction termed “brachycephalic obstructive airway syndrome” BOAS. BOAS has a demonstrably negative impact on quality of life of affected animals.

The following anatomical changes are seen in dogs with BOAS: narrowed nostrils, elongated soft palate, oversized tongue, and hypoplastic larynx and trachea.

As a result, the respiratory function in affected dogs can be severely compromised and is often signalled by a characteristic stertorous breathing.

The respiratory insufficiency that BOAS causes means affected animals have poor exercise tolerance and exercise-induced collapse is common.

Brachycephalic dogs also are at high risk of developing heat stroke in hot weather.

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Corrections surgery for BOA involves several interventions:
- Widening of stenotic nares (A)
- Palatoplasty of the elongated soft palate (B)
- Laryngeal ventriculectomy (C)
- Tonsillectomy

Boas surgery carries a risk of major complications. Postoperative dyspnoea secondary to tissue swelling and aspiration pneumonia are commonly reported.

Many dogs have chronically poor sleep quality as a result and will often adopt unorthodox sleeping positions to improve airway patency.

Ironically, these abnormal behaviours are appealing to well-meaning owners who often post them on social media. The clinical signs of BOA themselves can be a factor in the popularity of brachycephalic dogs.

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Owners are not aware of breed-related problems in their brachycephalic pets, thought to be low, at around 1.0%. By contrast, vets report 56% of brachycephalic dogs they see need treatment.

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2. If your project absolutely requires an image of a brachycephalic breed, then consider using a subject which has been bred responsibly. In December 2021, the Kennel Club in the UK revised their breeding guidelines for French Bulldogs to produce puppies with elongated muzzles and open nostrils. The only acceptable rationale for using images of extreme brachycephaly is to illustrate the clinical impact of BOAS and other breed-associated disease.

**HOW CAN MEDICAL WRITERS HELP TO IMPROVE THE WELFARE OF BRACHYCEPHALIC BREEDS?**

1. Ask yourself is an image of a brachycephalic dog essential for the content of your project. If the answer is “no”, then opt to use an image of a dog with a normal craniofacial morphology.

2. In December 2021, the Kennel Club in the UK revised their breeding guidelines for French Bulldogs to produce puppies with elongated muzzles and open nostrils. The only acceptable rationale for using images of extreme brachycephaly is to illustrate the clinical impact of BOAS and other breed-associated disease.

3. Engage with organisations which are working to raise awareness about the welfare of brachycephalic dogs. Current campaigns can be found here: [https://www.fecava.org/policies-actions/healthy-breeding-3/](https://www.fecava.org/policies-actions/healthy-breeding-3/)

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**DISCLAIMER:**

The opinions expressed in this article are the author’s own and are not necessarily shared by EMWA.