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THE EVOLUTION OF MEDICAL AESTHETICS

Facts and Insights



August 1, 2024
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Acknowledgement

In the journey of crafting this article, I have been fortunate to receive the support, guidance, and inspiration of many talented professionals who common values and appreciation towards this industry. Their contributions have been invaluable, and I would like to express my deepest gratitude to each of them.

First and foremost, I wish to extend my heartfelt thanks to the industry experts and leaders who worked tirelessly to grow and evolve the industry forward. You are my inspiration and source of continuous learning.

I am especially grateful to Victoria Leighton-Clark, CEO of VLC & M.E I.A MedEd Consultancies Ltd, whose profound understanding of medical aesthetic industry provided a solid foundation for many of the ideas explored here. Your meticulous feedback and thoughtful suggestions were crucial in refining the project.

A special note of appreciation goes to Gemma Keyworth, Managing Director of Global Executive Talent for your inspiration to embark on this journey. Your unwavering support and encouragement led me to see the bigger picture.

I would also like to thank my family especially Khalil Antoun, my husband for your patience and unconditional love. You are my strength. Your integrity and empathy is my inspiration to be a better person every day.

To my personal contacts in the industry, your continuous trust in my work have been a driving force. The countless conversations, shared experiences, and collaborative efforts enhanced this article. They are a source of personal growth and professional development to me throughout my journey.

Finally, I extend my gratitude to the entire team at EMA Aesthetics for enriching my personal journey. I intend to continue my journey to build a sustainable social and business community with people and technology based on love, resilience and pay it forward thinking shall continue from here.

With sincere appreciation,

*Adrine Ong
Industry Leader*

Overview

After completing my role as COO and spending 6 years learning about medical aesthetics, I am pleased to share my experience, and more importantly, aspire to support the industry's future transformation journey. As a note of disclaimers, the information gathered are based on my personal learnings and deductions of global and regional events. This is not intended to prejudice any companies or individuals but served as industry learning. The intention behind the series of articles, is to support those who are new to the medical aesthetic industry, and to build a sustainable community within. As for those who are part of the community already, please share your thoughts and feedback, they are invaluable to the progression of this vision.

Novel Applications Discoveries

When starting an industry, a few components are required. Firstly, discovery of strategic or unique products or services. Then finding the right audiences. Once the demand and supply relationship are established, the remaining value chain of services are required to enable delivery the products or services efficiently. This formed the different business models and channels which will influence the product values proposition and differentiation. Lastly the element of continuous improvement or innovation are fuel to keep the industry evolving and sustainable.

Aesthetic medicine (later evolved into medical aesthetics) was an underdog and challenging segment 20-30 years back. Several groundbreaking application discoveries among plastic surgeries, pharmaceuticals, medical devices and cosmetics industries set the stage for the industry to outperform and outgrowth the original industries. Here are some key milestones of aesthetic medicine product and service development that shaped the industry:

| Timeline | Key Contributor | Key Aesthetics Discovery | Reference |
|----------|---------------------------------------|---|-----------|
| 1960 | Dr Maxwell Maltz (plastic surgeon) | Publication of Psycho-Cybernetics. Depicting on connection between people's self-image via physical appearance, acknowledging people's interest to improve their physical appearance via plastic surgery. | 1. |

| | | | |
|--------|---|---|---------|
| 1987 | Dr Jean Carruthers (ophthalmologist) and Dr Alastair Carruthers (dermatologist) | Use of Botulinum Toxin for wrinkle reduction and published their first clinical studies in 1992. | 2, 3, 4 |
| 1996 | Q-Med, Sweden Pharmaceutical Company | Introduced first cross-link hyaluronic acid filler (Restylane) for facial volume and hydration rejuvenation. | 5 |
| 1997 | Dr Roger E. Amar (plastic surgeon) | Introduced Facial Autologous Muscular Injection (FAMI), technique of fat graft transfer for non-invasive facial rejuvenation. | 6. |
| 1996/7 | Dr Rox Anderson (Father of Laser Dermatology) | Invented laser hair removal device. | 7 |
| 1980s | Dr Albert Kligman | Discovered the effect of retinoic acid (tretinoin) in treating acne and photoaging skin. | 8 |

Thanks to the celebrity endorsements, continuous scientific and education effort, the “medical aesthetics industry” emerged from taboo to a sign of wealth then self-appreciation as Dr Maxwell Maltz pointed since the earlier on.

6 Megatrends Relevant to Medical Aesthetics Outlined

Rarely any industry is operating in silo, in fact all industries are intertwined and have impact on each other. On the bigger scale, we are shaping and being influenced by the megatrends at the same time. Thus, it is like a double edge sword since every growth opportunity come with its challenges. As custodians to our industry, we have moral obligation to think and act upon to make it sustainable. Here are the 6 megatrends (with no particular importance of sequence) that are most relevant to our industry:

1. Demographic shift and society diversity
2. Geopolitical volatility and power play
3. Borderless economy and extreme poverty
4. Digitalization and technology invasion
5. Urgency of sustainability thinking – climate and energy
6. Health and care evolution

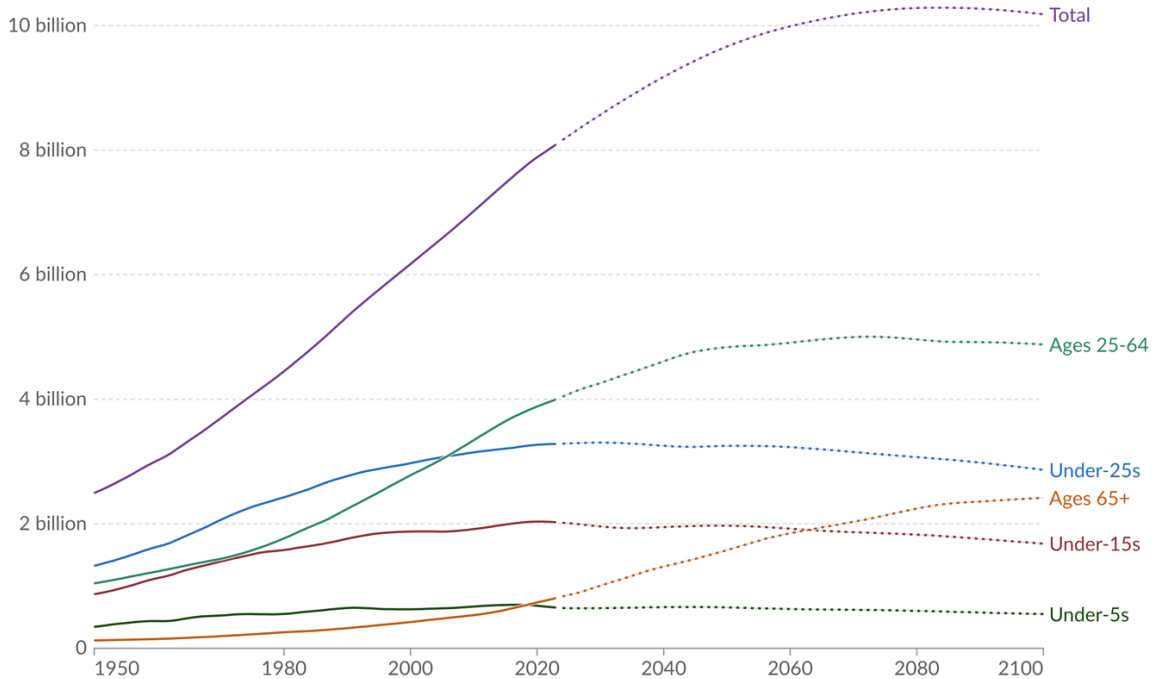
1. Demographic shift and society diversity

As global population continue to grow, the demographic shift is inevitable. Extract from Ritchie and Rodés-Guirao⁽⁹⁾, this table is indicating the UN population projection by 2100 as below:

Population by age group, World



Historic estimates from 1950 to 2021, and projected to 2100 based on the UN medium scenario¹.



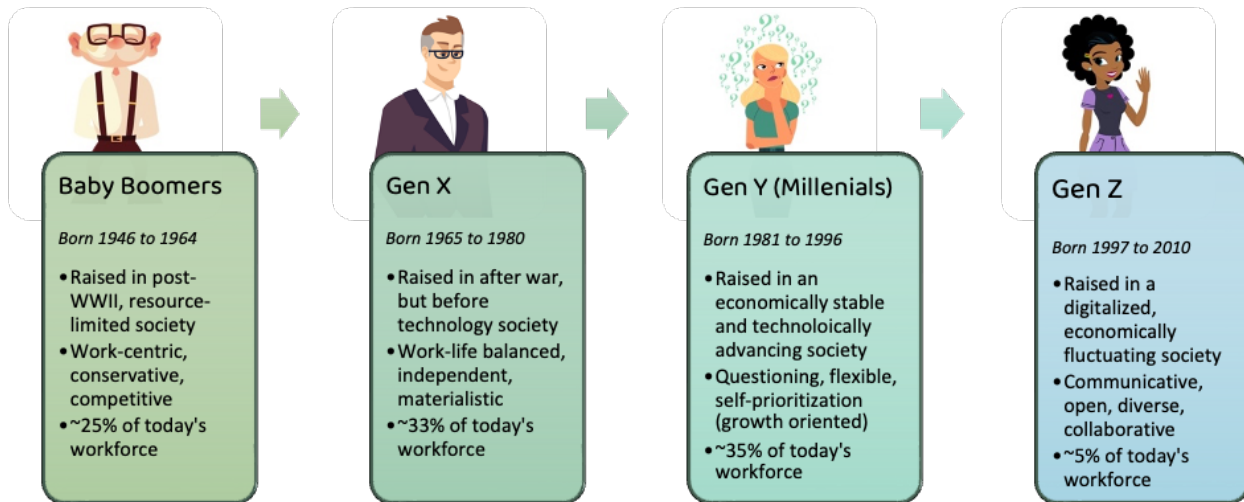
Data source: UN, World Population Prospects (2024)

OurWorldInData.org/population-growth | CC BY

1. UN projection scenarios: The UN's World Population Prospects provides a range of projected scenarios of population change. These rely on different assumptions in fertility, mortality and/or migration patterns to explore different demographic futures. [Read more: Definition of Projection Scenarios \(UN\)](#)

Resource: Our World In Data: <https://ourworldindata.org/un-population-2024-revision>

The main take away here is the drastic increase of age group 65+ while other groups are in slight decline due to the reduced birth rate in different part of the world. This also reflects on the evolution of the society and cultural shift by generations accordingly to Odukoya⁽¹⁰⁾.



Resource: John Hopkins University, <https://imagine.jhu.edu/blog/2022/11/17/the-changing-generational-values/>

As the century continues, Gen Y and Gen Z values are going to make up more and more of the society, the society shift such are gender equality, LGBT movement and concept of gig economy and new profession such as influencers are going to take a more prominent role in the society.

The implication towards medical aesthetics would be clearly on the increase demand for aesthetics treatments. Society's acceptance of aesthetic treatment is growing already, and it will be accelerated even faster not only in the anti-ageing but also skin care, body shaping treatments. Taking their appearances personally, look and feel good are going to be more and more emphasized.

2. Geopolitical volatility and power play

Accordingly, to Time ⁽¹¹⁾, and John and Sen⁽¹²⁾ about 64 countries and European Union are going through election in 2024. This is representing a combined of 49% population across the globe. The key issues that are concerned by the populations who are casting their ballots are largely including, raising cost of living, climate change, anti-immigration, increased national debts and national security spending. The strong need to exercise democracy is born out of their concerns towards how government is going to improve their live and making it safer.

The implication towards medical aesthetics is the interlink with the economic policy and outlook. Despite all these societal, economic issues, medical aesthetic had proven to be a resilient industry through out COVID-19 pandemic. This is one of the first industry that rebound to growth.

According to the International Survey on Aesthetic/ Cosmetic Surgery performed in 2020 conducted by International Society of Aesthetic Plastic Surgery (ISAPS) (13), amid of pandemic the nonsurgical treatments grow in 2020 versus 2019 and 2016.

NUMBER OF WORLDWIDE NONSURGICAL PROCEDURES PERFORMED BY PLASTIC SURGEONS



| Rank | NONSURGICAL PROCEDURES | Total | Percent of Total Nonsurgical Procedures | Total Procedures in 2019 | Total Procedures in 2016 | Percent Change 2020 vs. 2019 | Percent Change 2020 vs. 2016 |
|-------------------------------------|----------------------------|-------------------|---|--------------------------|--------------------------|------------------------------|------------------------------|
| 1 | Botulinum Toxin | 6,213,859 | 43.2% | 6,271,488 | 4,931,577 | -0.9% | 26.0% |
| 2 | Hyaluronic Acid | 4,053,016 | 28.1% | 4,315,859 | 3,372,445 | -6.1% | 20.2% |
| 3 | Hair Removal | 1,837,052 | 12.8% | 1,042,951 | 1,146,523 | 76.1% | 60.2% |
| 4 | Nonsurgical Fat Reduction | 560,464 | 3.9% | 462,769 | 433,351 | 21.1% | 29.3% |
| 5 | Photo Rejuvenation | 517,675 | 3.6% | 391,415 | 623,243 | 32.3% | -16.9% |
| 6 | Chemical Peel | 409,054 | 2.8% | 369,497 | 585,614 | 10.7% | -30.1% |
| 7 | Micro-Ablative Resurfacing | 240,213 | 1.7% | 270,759 | 183,432 | -11.3% | 31.0% |
| 8 | Full Field Ablative | 225,141 | 1.6% | 190,978 | 210,844 | 17.9% | 6.8% |
| 9 | Calcium Hydroxylapatite | 222,785 | 1.5% | 212,762 | 164,911 | 4.7% | 35.1% |
| 10 | Poly-L-Lactic Acid | 121,087 | 0.8% | 90,259 | 79,664 | 34.2% | 52.0% |
| TOTAL NONSURGICAL PROCEDURES | | 14,400,347 | | 13,618,735 | 11,731,603 | 5.7% | 22.7% |

Resource: ISAPS, <https://www.isaps.org/discover/about-isaps/global-statistics/reports-and-press-releases/global-survey-2020-full-report-and-press-releases-english/>

In my upcoming second article, I will dive into the key perception shifts in the medical aesthetic industry that leads to the growth and demand of aesthetic treatment.

3. Polarizing economy and extreme poverty

According to The World Bank Group⁽¹⁴⁾, while the global economy is stabilizing after the COVID-19 pandemic, the high interest rate are geopolitical tensions are dividing the global economy to further extremes.

As post COVID-19 pandemic, globally we experienced raising cost of living due to multiple global events including increased interest rates, energy crisis caused by Russia-Ukraine war and US-China trade war. While inflation rate is declining,

the world is struggling to get back to pre-pandemic level. Middle class people are still struggling to cope with new reality of cost of living, that will directly reflect the struggle of the low-income countries such as Africa region.

The implication towards medical aesthetics on affordability. While the upper- and middle-class population want to look better, they sought after affordable anti-ageing or skin care treatments more frequently. While high value treatment such are body-sculpting or medical grade treatment and fading in demand. This also in line with the influx of cheaper cost devices coming from Asia, especially South Korea and China with similar level of service provided by local distributor representatives. On the other hand, medical aesthetic treatments remained a service for upper end of the income class in Africa region considering.

4. Digitalization and technology invasion

Thanks to the telecommunication and computing power advancement, the world is being digitalized in an exponential rate. According to Dubai Future Foundation (DFF) ⁽¹⁵⁾, as service provider are advancing with 5G and 6G network connectivity and quantum computing are accelerating its adoption, and the global IoT market is expect to grow at 12% compounded average growth rate and reaching \$1.2 trillion by 2025 (from \$793mil in 2021).

Digitalizing our lives are the new reality. Our every move is generating data to enable different industries, technologies to learn empirically about us, like it or not. Artificial Intelligence are going to get better through Large Scale Learning, and this will be embedded in every aspect of our lives and every industry whether we are prepared for not. According to DFF⁽¹⁵⁾, “to Integrated financial, education, healthcare, trade, services are leading to unmediated transaction and blurring of jurisdictional boundaries, changing liabilities, and increased numbers of cross-border communities”. We are going to start living a borderless world virtually.

The implication towards medical aesthetics the business efficiency. Data based on science, IoT connectivity and smart treatment are the future. The speed of adoption will be trailing behind pharmaceutical, medical devices segments considering the significant resources invested into that. The low hanging fruit would be, continuous improvement of industry business efficiency via data, which

is what is lacking currently. Introduction of IoT devices in medical aesthetic industry is inevitable. Thus, more data became available and different aspect of business and operation efficiency including cost, quality and patient experience are tangibly becoming value proposition for innovation. This would lead to further industry segmentation and differentiation. On the other hand, ethically balancing between patient personalization and data sharing will become urgent in every industry. Ultimately, it is about educating the industry professionals to adapt to new way of working with data, that will be whole new level of performance management to enable patient care at the center of the industry.

5. Urgency of sustainable thinking – climate and energy

According to the World Economic Forum⁽¹⁶⁾, “the “climate tipping point” (referred as threshold at which long-term, potentially irreversible and self-perpetuating change to a planetary system occurs) could be passed within the next 10 years”. Despite the risks, there is lack of coordinated effort across the global to address the issues. Low usage of hydrocarbon material (instead of recycling material); adoption of alternative energy source remained low even it is growing; increase energy consumptions among the income countries; industries activities continued to rise, and growing populations remained as reality.

The truth is, climate change and energy transition are an enormous humanity issues that, there is no easy way to address by any government or policy maker as the impact towards, global economic, politic, society required every one of us to start thinking sustainably and change our lifestyle and habits altogether. This is supported by Maizland⁽¹⁷⁾. Of all the megatrends, this is probably the most critical and urgent one to address should we want planet Earth to survive.

The implication towards medical aesthetics due to extreme weather phenomena, people are going to be more and more exposed to skin diseases, accordingly to Belzer and Parker ⁽¹⁸⁾. Skin is our biggest organ that protects the body from external harm, exposure to any harsh weather condition such as ultraviolet radiation long term could leads to skin damage and diseases such as atopic dermatitis, psoriasis, acne vulgaris, melasma and photoaging. Demand for dermatological as well as medical aesthetic treatments are expected to rise due to increase of environmental issues caused by pollution. This is already reflected into the growth trajectory of the industry.

6. Health and care evolution

Tapping into megatrend of digitalization and technology invasion, in healthcare industry, adoption of advance machine intelligence, nano and biotechnology, IoT and Industry 5.0 are well underway, DFF⁽¹⁵⁾ stated that. This is contributing to the possibility of longevity and overall health of all ages. Two of the implementations of technology in the health aspect is the mental health and society wellness. This leads to the divergence of healthcare industry towards the "health" and "care" of people.

While "health" is focusing on prevention; "care" is focusing on treating and managing the condition. The significant evolutions of these is on the emphasis of holistic approach towards people's well-being, including nutrition, mental and emotional wellness, physical wellness, end to end medical care infrastructure and medication services.

The implication towards medical aesthetics is the continuous growth potential and segmentation of the industry. According to Moeller⁽¹⁹⁾, this segmentation such as "med spa" started growing steadily in US after pandemic with more than \$4B as revenue and employing more than 100,000 people across 11,000 med spas and projected to grow. Other evidence is the recent change of regulation in France, opening the regulation of laser hair removal device to certified therapist in 2022 according to Boudet-Gizardin and Jannet⁽²⁰⁾. This enables the industry to grow further and making the medical aesthetic treatment such as hair removal treatment more affordable and accessible to the consumers.

Here are my conclusions after diving into the industry and reviewing the megatrends that concerned us:

- Globally, people (men, women, young and older) are getting more conscious about their aging process and wanted to maintain a positive appearance which also reflects their inner well-being.
- COVID-19 pandemic is a pivot moment of medical aesthetic industry. The constraint of supply, new way of living and working transformed the consumer's behavior such as, need of facial volumization to skin quality that shifted the segment dynamics signification especially in the dermal filler and skin care categories.

- Despite geopolitical and economical volatility, people are more opened to spend on aesthetics treatments provided it is affordable, has efficacy and with very little or no down time.
- Along with data and technology progression, medical aesthetics segment will undergo further advancement with new technology, new products and new way to conduct business more efficiently and consumers will be much more well informed.
- As healthcare industry continue to grow in importance, it will be segmenting further the “health” and “care” element which enable specialization of the medical aesthetics industry.

Based on different sources, here are the compound average growth rate (CAGR) of medical aesthetic values by region by 2029:

| Region | Revenue by 2029 (\$) | CAGR (%) |
|----------------------|----------------------|----------|
| North America | \$7.1 Billion | 9.8% |
| Europe | \$5.2 Billion | 8.5% |
| Asia Pacific | \$4.5 Billion | 11.2% |
| Latin America | \$1.2 Billion | 7.5% |
| Middle East & Africa | \$1.6 Billion | 9.0% |
| World | \$19.6 Billion | 10.2% |

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Medical aesthetic is no doubt going to continue to strengthen its importance globally as a thriving industry. In our next article we will be diving into the consumer’s behavior and mindset that enabled the segment of industry bloom in a rapid pace next.

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