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How Novartis deploys a new model of creativity to understand patients better

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Received 16 November 2022
Revised 23 May 2023
Accepted 23 May 2023

Abstract

Purpose – To better understand the reality of living with the diseases and conditions that its drugs and therapies are developed to treat, the Novartis leadership determined a need for more meaningful insights into patients' lives. They sought to develop a systematic, creative methodology – informed by the psychology of insightful rather than analytical thinking – to properly integrate and deploy the research commissioned into its day-to-day business decision-making. For it is well established that better understanding of the patient reality drives both compliance and adherence "beyond the pill". The purpose of this paper is to bring the novel methodology of creativity to a wider audience and ensure that many others – notably in patient advocacy organizations – can benefit from this approach.

Design/methodology/approach – A core team of Insight and Analytics and Patient Engagement leads from various therapeutic area teams worked in partnership with a psychologist and practitioner in the field of insightful thinking, to develop an effective methodology that could reliably surface and articulate genuine patient insights. This methodology – the i4i Insights Discovery™ process – was developed, piloted, refined and codified in 2020 and implemented across the company in 2021–2022. It uses a combination of convergent and divergent thinking techniques – human rather than artificial intelligence, combining diverse research outputs – to understand patients' lives better. With enhanced understanding, the insights then shape educational and behavioral strategies to drive adherence and compliance.

Findings – At a time of tightening budgets and demands to deliver enhanced impact from research budgets, i4i Insights Discovery™ has enabled Novartis teams to turn existing research outputs into profound and useful understandings of what it means to live with specific diseases and develop evidence-based patient engagement strategies; insight-driven decision-making around the lifecycle of any compound. i4i Insights Discovery™ has been applied across Novartis's diverse areas of expertise, from heart disease to cancer, from organ transplantation to dermatology, from food allergy to ophthalmology.

Practical implications – The i4i Insights Discovery™ process enables Novartis teams to gain deeper understanding of patients' lives without the need to commission additional research; to do more with less. These insights enable cross-functional Novartis teams to develop better-informed strategies that better address the needs of patients and their care partners, of health-care professionals and health-care systems. The team creating the process is looking to make the i4i Insights Discovery™ approach a gold standard of insight discovery, both for pharma and health care and in other categories, too.

Originality/value – The i4i Insights Discovery™ process is a practical, novel application of well-established principles in the psychology of insightful thinking to address a clear business imperative. By

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International Journal of Pharmaceutical and Healthcare Marketing
Vol. 17 No. 3, 2023
pp. 311-326
Emerald Publishing Limited
1750-6123
DOI 10.1108/IJPHM-11-2022-0100

repurposing and reinterpreting existing research outputs using creative verbal and visual exercises, it delivers a more human and empathetic understanding of the patient reality. It moves teams from "So what?" – this is what the data mean – to "Now what?" – this is what we should do as a result.

Keywords Engagement, Insight, Innovation, Research, Creativity, Patient

Paper type Conceptual paper

Introduction

There are many factors affecting whether or not patients comply with the recommendations of their physicians and adhere to the medications prescribed to address the diseases or conditions from which they suffer. A major meta-analysis of the extent and determinants of non-compliance (Morris and Schulz, 1992) found that adherence and compliance – two critical factors that ensure drugs have the best chance to work as intended – can be improved through a combination of both educational and behavioural strategies, and a comprehensive understanding of what it is like to suffer from specific conditions and live with the reality of the medications prescribed.

Non-compliance and lack of adherence occurs among patients with diseases and conditions that are both acute (requiring time-limited medication) and chronic (requiring medication to be taken for the rest of the patient's life; Zisook and Gammon, 1981). This includes medications deemed to be vital for both quality of life and the prolongation of life expectancy, including drugs that regulate life-curtailing, chronic diseases such as cardiovascular disease (Joshi *et al.*, 1999), cancer (Kostev *et al.*, 2014) and even following organ transplantation (Laederach-Hoffman and Bunzel, 2000).

At face value, the decision of patients not to take medications can appear to be counter-intuitive – particularly to physicians and researchers in pharmaceutical companies, who understand the relative and absolute risk for patients with specific diseases and conditions and their medication regimens. Reasons for non-compliance and failure to adhere to a regimen of medication – particularly multiple medications required to manage one or several diseases or conditions – are many and various. They can include: acute or chronic side effects, fear, worry, depression, cost, incompatibility with lifestyle, psychological denial, a lack of symptoms (not feeling ill), a mistaken belief that a chronic disease or condition has been controlled or cured by the acute administration of medication, mistrust of medicine in general and forgetfulness (AMA, 2020).

Designing strategies that improve health outcomes for patient communities – educational and behavioural interventions that go "beyond the pill" – is an imperative for innovation and success across the pharmaceutical industry (Wenzel and Henne, 2014). For these initiatives to succeed, however, it is vital that those developing them have meaningful, disease-specific insights into the lives of patients – and often the lived experience of care partners of those patients, too. This is particularly true for care partners of those suffering from neurological and neurodegenerative conditions (Pollock, 2021), as well as care partners (often parents or guardians) of minors (Rotberg *et al.*, 2020). Both categories of care partners can play a significant – if not total – role in patient decision-making around their treatment.

Purpose

To enhance patient adherence and compliance and at the same time improve patient knowledge – to develop medicines and supportive patient engagement programs that meet patient needs and so improve long-term health outcomes – in 2019 Novartis's leaders identified the need to standardize and systematize the company's determination to seek out and unlock insights from patient communities. To increase patient focus, they saw that they

needed to bring the voice, experience and perspective of patients to the heart of drug development, design and delivery.

Beyond data, information and observations of patients' lives, Novartis started out on a journey to create an effective way of bringing patient insights to the heart of decision-making. This required the development of a creative thinking process in an analytical thinking culture – two fundamentally different types of cognition. Additionally, the process was architected to enable Novartis teams to surface and articulate insights into other stakeholder groups too, including care partners and health-care professionals. It was stakeholder-agnostic, by design.

Aims and structure of this paper

The aims of this paper are to explore and explain how Novartis developed its i4i Insights Discovery™ process. By detailing how and why the process was developed, piloted, refined, codified and rolled out across the company as the "by Novartis, for Novartis" methodology for surfacing and articulating insights, the paper aims to make this approach a gold standard in insight discovery. It is our intention to establish i4i Insights Discovery™ as a way of thinking and working with existing research assets that can benefit others – in the pharmaceutical as well as other sectors.

The methodology described enables Novartis teams to make the research studies they commission work harder for them – and for the patients they serve. By synthesizing the findings from a wide variety of research inputs – primary and secondary market research, patient segmentation, social media listening reporting, academic papers and patient advisory boards – the process enables cross-functional teams to surface and articulate meaningful insights into the lives of patients and care partners in any disease or condition. It overlays human intelligence and creativity on data and research outputs that too-often are not turned into meaningful, patient-facing activities.

By understanding patients and their perspectives better, teams then use their empathetic understanding of the patient reality to develop therapeutic area strategies, educational and behavioural interventions, that better meet patient needs. This, in turn, has the potential to improve patient health outcomes thanks to greater adherence and compliance to drugs and other therapies proven to be effective in clinical trials.

This paper covers the development of the research methodology, its impact and the implications this way of thinking and working has had to date – and can have in the future. It considers the implications for practitioners and the wider research community, while also highlighting the limitations of the process and ways in which it could be enhanced.

Research methodology

Advanced research tools and techniques are fundamental to how Novartis seeks to understand the patient experience and so deliver therapies that are compatible with patients' lives. These include primary market research, social media listening, market intelligence tracking and collaborating with patient organizations. Novartis's 700-strong Insight and Analytics team in Hyderabad is one of the largest pharma research communities anywhere in the world. Neither the Hyderabad team nor the Patient Engagement leads in different franchise areas lacked data. It was time to establish how to move from data to actionable insights that help reimagine medicine.

In 2019, Novartis's leaders identified the need to standardize and systematize the company's determination to seek out and unlock patient insights, while of course respecting all applicable confidentiality and data privacy requirements. The first step was to establish a senior project team with active collaboration across functions – Insights and Analytics,

Patient Engagement, Clinical and Medical. This core team also enjoyed representation across the medicines' lifecycle, from the Novartis Institute of Biomedical Research, Global Drug Development and all the company's franchises, focused on specific disease areas. The team was cross-functional by design because it is well established that diverse teams whose members have different experience, backgrounds and areas of expertise are more likely to develop more diverse, more creative and fundamentally more insightful outputs (Jansen and Searle, 2021; De Bono, 1985).

The six-strong team – which together had more than 100 years' experience in insight, innovation and patient engagement roles, in both pharmaceutical marketing and consumer goods – pooled all the resources, tools and methodologies for surfacing and articulating insights that they had used productively during their careers. This included several different variants of the Design Thinking approach pioneered by David Kelley at Stanford University's d.school and in the consultancy IDEO (Kelley, 2001), Edward De Bono's "Six Thinking Hats" methodology (De Bono, 1985) and the process created by Allan and collaborators in the creative consultancy? WhatIf! (Allan *et al.*, 1999).

The Novartis team also sought the external perspective of an independent expert in the field of insight and insightful thinking to be its partner in developing its own, proprietary methodology for surfacing and articulating insights. They engaged psychologist Dr Sam Knowles, a 30-year veteran of the analytics and insight industry, author of the book *How To Be Insightful: Unlocking the Superpower that Drives Innovation* (Knowles, 2020) and creator of the STEP Prism of InsightTM, a model designed to systematically surface and articulate insights.

Setting a high-bar definition of insight

The explosion of data in the past 20 years means that all categories of business – and all functions within businesses – are now data-rich (Mayer-Schonberger and Cukier, 2013), with more information and metrics at their disposal than ever before. The challenge most people in the modern knowledge economy face is not data poverty, it is data excess or infobesity (Knowles, 2018). As a consequence, the term and the concept of insight has become devalued (Berinato, 2019). Too often, data points, information and casual observations are presented and accepted as "insights" but they do not satisfy even a dictionary definition of the word; the *Cambridge Dictionary* defines insight as: "a clear, deep, and sometimes sudden understanding of a complicated problem or situation, or the ability to have such an understanding".

Accordingly, as a first step in developing a proprietary process for turning information into insight, the team set a high-bar definition of insight to become the Novartis understanding of the concept. They settled on the following:

> A profound and useful understanding of our customers' attitudes, behaviors, or beliefs that enables us to reimagine actions and so establish a deeper connection and relevance between us and their lives.

The definition was designed to be challenging, aspirational and directive. By moving beyond data, information and casual observations, it aims to help those working with it answer the questions "So what?" – "What do the data mean?" – and, armed with that understanding, move on to answering the practical questions "Now what?" – "What can we do with that understanding to help those we are working with?". In the context of Novartis, this means understanding what it is like for patients (and other stakeholders, including care partners and health-care professionals) to live with the diseases and conditions that affect them. By better understanding the patient reality and issues that get in the way of adherence

and compliance to prescribed treatments, relevant teams could design educational and behavioral strategies rooted in patients' lived experience. As a result of this deeper connection, because these strategies build in the patient perspective, the hypothesis is that they are also more likely to succeed than those that do not.

Insightful thinking in an analytical thinking culture

The pharmaceutical and health-care sector is primarily an analytical thinking culture. Evidence, proof and science are demanded as a fundamental cornerstone and underpinning of all problem-solving and decision-making in the development and marketing of novel, effective and safe drugs and therapies for different diseases and conditions.

The challenge in developing a systematized process for insightful thinking is that insightful thinking is not the same as analytical thinking (Knowles, 2020). Analytical thinking yields to time input, intellect and brain power; it is linear and logical and reducible to predictable – if often complex – formulae; it thrives on time spent working on the challenge thanks to the sustained application of conscious processing. Insightful thinking, meanwhile, involves the recombination of existing knowledge in new and hitherto untried ways; thrives on distraction and timeout; requires the focused application of subconscious processing; and delivers immediate comprehension (Kounios and Beeman, 2015).

The psychology of problem-solving is dominated by two complementary cognitive models: representational change theory and progress monitoring theory. Representational change theory (Knoblich *et al.*, 1999) posits that to solve a problem, we must deconstruct it into its component parts and use a combination of logic and long-term memory (past experience) to resolve them. While this works efficiently in solving analytical problems, in insightful thinking we are looking to join together existing information in new and hitherto untried ways. The strategy that works for analytical thinking problems turns out not to work for insightful thinking problems because of the constraints or impasses that prior knowledge puts in the way.

Progress monitoring theory (MacGregor *et al.*, 2001) suggests that when we are trying to solve a problem, we monitor how we are getting on with the task at hand, decompose it into chunks and assess progress based on performance on the component parts. We are only satisfied that we have solved the problem when our progress monitoring suggests all chunks have been satisfactorily addressed. Again, because prior experience and knowledge introduce constraints or impasses, when faced with the challenge of surfacing and articulating insights, we find our usual, analytical problem-solving strategy unhelpful.

A technique for producing ideas

The psychology of insightful thinking was first characterized by the pioneering social psychologist Graham Wallas, in his 1926 book *The Art of Thought*. Wallas was the first to characterize a four-step process in moving from information to insight:

(1) Preparation: the problem is investigated from all directions.

(2) Incubation: not consciously thinking about the problem.

(3) Illumination: the appearance of the happy idea.

(4) Verification: the validity of the idea is tested.

This same, four-step approach was described independently in many different fields, from the late 19th to the mid-20th centuries, from music to biology, from mathematics to novel writing, from chemistry to advertising (Flesch, 1951). It features in John Livingston Lowes' monumental study of how Coleridge created his poem, *Kubla Khan* (Lowes, 1927), in

advertising executive James Webb Young's *A Technique for Producing Ideas* (Webb Young, 1940) and in studies of creativity in engineers (Cropley, 2016).

To join existing knowledge, data and understanding together in new and unexpected ways, we need to relax the analytical constraints on our thinking, making it – in the words of Leonard Mlodinow, the Caltech physicist who helped to resolve the psychology of insightful thinking – more elastic and flexible (Mlodinow, 2018). This means that we need to throw off the usual shackles and constraints of analytical thinking.

In part, this is achieved by total immersion in the subject matter area. In part it requires deliberately building timeout into the creative process. And in part it demands those looking to surface and articulate insights use a combination of convergent and divergent thinking techniques to foster insight generation (following Guildford, 1959; see practical applications in engineering in Cropley, 2016). Divergent thinking techniques open up possibilities and options, introducing new data; convergent thinking techniques force us to make choices and discard data, focussing on what matters. What psychology has demonstrated experimentally has also recently been confirmed by both positon emission tomography (PET) and functional magnetic resonance imaging (fMRI) brain-scanning technology (Kounios and Beeman, 2015). For example, research in Kounios and Beeman's labs show that, just before we solve an insight problem, our visual cortex – about 40% of our brains – effectively shuts down. The floodlight of attention becomes a laser-focused spotlight, presaging – in Wallas's words – "the appearance of the happy idea".

Aligning the planets: creating a systematized process for insightful thinking

Guided by these principles rooted in the psychology and neuroscience of insightful thinking, the cross-functional Novartis working party developed a systematized, creative, insightful thinking process. The process was designed to enable teams working across the business to surface and articulate genuine patient insights and so better understand the patient – and care partner – reality of living with any and all of the diseases and conditions its drugs and therapies exist to treat. In this way, the methodology was an insightful thinking process specifically designed to work inside what always has been – and always will be – a predominantly analytical thinking culture.

By taking any and all research outputs the company commissions, the process sought to enable its teams to do more with less; to spot commonalities and alignments in data from primary market research, social media listening, patient segmentation and other research outputs and craft these into genuine insights into patients' lives. In this way, the company aimed to institutionalize patient insight-driven decision-making, enhance adherence and compliance and achieve its mission of improving health outcomes.

The i4i Insights Discovery™ process was designed as a four-stage methodology run in what were designated as Insight Sprints, each stage named after one of the four "I"s of insightful thinking – IMAGINE, IMMERSE, INTEGRATE and INSPIRE. These four stages were in part inspired by the four-step models developed independently in many domains during the 20th century (Wallas, 1926; Flesch, 1951), although the four i4i Insights Discovery™ stages do not map perfectly onto those earlier models. Insight Sprints are designed to run over a four-to-eight-week period, with up to 12 participants required to dedicate up to three full days of their time to the process while they continue to fulfil their responsibilities within Novartis. This time comprises multiple creative and action-planning workshops, information gathering and preparation and immersive patient experiences.

Throughout the i4i Insights Discovery™ process, convergent and divergent thinking exercises are conducted in a similar way, underpinned by the principle that diverse minds with diverse experience and different perspectives are more likely to generate a richer understanding of the patient reality (De Bono, 1985). Up to 12 participants come together

from different functions and disciplines from within Novartis, including patient engagement, clinical development, medical affairs, market access, marketing, commercial, regulatory affairs, health economics, insight and analytics, new product development and innovation and pipeline strategy. For the creative thinking exercises that characterize the process, all participants are briefed together as a group. They then split into breakout rooms – real or virtual – and work alone initially, then share their creative outputs in small groups of three to five. They blend and merge ideas together in these groups, and then bring their integrated outputs back to the whole team, where ideas are shared in plenary. In this way, diverse experience and perspectives are continually heard and blended, with no one voice dominating.

IMAGINE – articulating the key challenge for which insights are required

Insights do not exist in a vacuum, and understanding the patient reality needs focus. This is why the first workshop in i4i Insights Discovery™ introduces all participants to the process, explains the importance and consequences of the high-bar definition of insight (above) and has them create a key challenge for the Insight Sprint for which insights are required. Examples of great insights that have effected change – from outside as well as inside the pharmaceutical and healthcare business – are shared by way of stimulus. Additionally, the principles of asking smarter questions are detailed (Knowles, 2022), together with examples of how key challenges have been framed in previous Insight Sprints. i4i Insights Discovery™ sought inspiration from a variety of different creative thinking methodologies, including several different variants of the Design Thinking approach (Kelley, 2001). In its Design Sprints, Design Thinking typically uses a question that starts with the inclusive formula "How might we [. . .]?", and this is typically the way in which key challenges in an i4i Insights Discovery™ Insight Sprint are framed.

The principal output of the IMAGINE stage is a clear and agreed articulation of the key challenge for which the cross-functional team needs insights. Key challenges are framed according to the following principles, in that they: are open not closed questions; avoid technical, scientific or over-medicalized language; open up multiple possible responses; consider life and life experience from the patient's perspective; are designed to elicit stories, human truths and empathy; and are answers with solutions that are more complex and nuanced than simply recommending the use of products, treatments or therapies. With the key challenge set, the process enters the second stage, IMMERSE.

IMMERSE – bringing all participants to the same level of informed knowledge

Something cannot come from nothing. To foster insightful thinking – to facilitate the joining together of "old and old to make something new" – individuals and teams need to have an established base of knowledge. In many corporate cultures, information is shared in the form of colleagues making presentations to one-another. Yet it is well-established that the "death by PowerPoint" approach is counter-productive to creativity (Amabile *et al.*, 2017; Roberts, 2018; Moore, 2007). Indeed, we learn and acquire knowledge best and process it deeper when we adopt a "learning by doing" approach (Reese, 2011; Felder and Brent, 2003), a principle advocated from Plato onwards, and endorsed with increasing evidence by thinkers as diverse as Marx, Montessori, Watson and Skinner.

Accordingly, to bring all participants to the same level of informed knowledge, the IMMERSE stage of the i4i Insights Discovery™ process does not involve hours of presentations but instead provides a journey of self-discovery. The Insight and Analytics and Patient Engagement leads in the Insight Sprint curate existing evidence and shares this in summary form. Participants are encouraged to explore research reports in full when specific data triggers their interest. The guided process of discovery is designed to take up

to four hours across two weeks, with a summary and all original research debrief documents shared on a Microsoft Teams space.

In addition, for each Insight Sprint an immersive patient experience is developed for all participants to undertake. At its most basic, this involves watching live or recorded interviews with care partners, patient advocates and patients of the disease or condition in question. In the case of common conditions – for instance, presbyopia; age-related long-sightedness, which affects four in five people aged 50 or over – participants are provided with a discussion guide to ask friends and family what it is like living with the condition. For other conditions – such as food allergy – participants are given guidelines on living for a day "as if" they suffered themselves and then given the opportunity to write a short, reflective essay on how they found it. Another approach adopted successfully is for participants to live a structured, simulated "day in the life" of a patient, interacting with actors and digital artefacts to experience some aspects of life with the disease or condition.

The IMMERSE stage typically lasts around two weeks and is designed to fit around participants' day jobs. They record the experience of immersion in the patient reality of the disease or condition – mediated via guided readings, videos and the immersive experience – in a bespoke workbook in which they capture the most promising emerging themes. Participants bring their completed workbooks with them to the creative workshops at the heart of the process, INTEGRATE.

INTEGRATE – turning data and information into insights

The third stage of the process is known as INTEGRATE, and it is the beating, creative heart of i4i Insights Discovery™. INTEGRATE typically runs over three, half-day sessions. The workshop assignments alternate between convergent and divergent thinking exercises, enabling individuals, small groups and the whole team to flex between making choices and creating options; to zoom in and zoom out, as they come to share and understand the patient reality better. There are up to ten exercises run during the course of the INTEGRATE stage.

This stage is split over three, half-day workshops, typically run over a week or two. This is done for three reasons. First, to maximize creative output and minimize burnout. Second, to ensure that the process does not intrude excessively on participants' everyday responsibilities. And third, to allow meaningful periods of timeout between the sessions to allow participants' subconscious minds to combine and recombine the information and data they are exposed to in new ways. For not only do participants learn new evidence and proof points from one another; the creative, storytelling exercises that they all undertake and share with each other also provide further stimulus and fresh perspectives to enrich and enhance their own creativity (after Storr, 2020).

Example divergent thinking exercise: "Adjectives, Verbs, Nouns"

An example of a divergent thinking exercise run during INTEGRATE is a task called "Adjectives, Verbs, Nouns" (Knowles, 2022). Adjectives connote emotion, verbs action and nouns facts. Analysis of the language that pharmaceutical and health-care companies use to describe what they do, how and why shows that – if just adjectives, verbs and nouns are counted – the split is typically 70% nouns, 15%–20% verbs and just 10%–15% adjectives. This imbalance shows how most pharma businesses talk to those they are looking to influence rationally. Yet the psychology of decision-making shows that we make our decisions emotionally, not rationally, using the non-verbal, evolutionarily ancient reptilian and limbic brain (Kahneman, 2011). We only go on to justify them rationally, using evidence, data and facts once decisions have been made.

This exercise seeks to address this imbalance and generate new expressions of the patient reality. First, small groups of up to five participants spend ten minutes generating a long list of the most distinctive adjectives describing the disease or condition which is the focus of the Insight Sprint. They then spend the same period generating lists of distinctive verbs and then nouns. Finally, participants take it in turn to compose novel sentences using at least one of the adjectives, verbs and nouns in the long lists. By addressing the adjective–verb–noun imbalance typically found in pharma communication, it is more likely that the novel sentences will contain more emotion and be real stories about real people really experiencing something. These are often the beginnings of stories that are triggered by genuine insights into patients' lives – a profound and useful understanding of what it means to live with and manage their disease or condition.

Example convergent thinking exercise: "The Pixar Pitch"

An example of a convergent thinking exercise run during INTEGRATE is a task known as the Pixar Pitch. Disney's Pixar animation studio is one of the world's finest storytellers. Before any narrative is even considered for storyboarding and ultimately production by Pixar, every single story has to be expressed in a simple, six-cell formula (Catmull, 2014; Pink, 2014):

> "Once upon a time [. . .]"
>
> "Every day [. . .]"
>
> "Then one day [. . .]"
>
> "Because of that [. . .]"
>
> "Because of that [. . .]"
>
> "Until finally [. . .]"

In this exercise, participants are required to use this template to write a patient-focused story using the Pixar template. It might be based on one of the most promising emerging themes identified during the IMMERSE stage, captured in participants' pre-workshop workbooks. It might be based on one of the emerging themes that others picked out. It might be an extension or an expression of the patient reality they or other participants have described in one of the other creative exercises. Most likely, it will be a blend of several different sources. It is up to participants to write the story that they feel best represents a key aspect of the patient reality. That's the point of INTEGRATE: bringing together multiple sources of understanding to gain meaningful insights into patients' lives.

Crafting patient insights

There are many different ways – and no definitive, single best way – to express insight. Because of the high-bar definition of insight as "a profound and useful understanding" – so much more than simply data, information, or casual observations – the format participants use in i4i Insights Discovery™ comprises two causally-connected statements and a consequence, thus:

> [STATEMENT 1] [. . .] because of [. . .] [STATEMENT 2] [. . .] which means [. . .] [CONSEQUENCE].

The causal connectivity between "old and old to make something new" has already been established in earlier creative exercises, including the Pixar Pitch described above ("Because of that [. . .]" and "Because of that [. . .]"). In the final half-day workshop of the INTEGRATE stage of the process, participants articulate insights using this formula. Throughout the INTEGRATE stage, the workshop facilitator shares with participants examples of insights expressed using this formula – from outside and inside the pharma and health-care industry, including in previous i4i Insights Discovery™ Insight Sprints. By the time they come to write insights themselves, they are already familiar with the format.

Participants write insights individually and share them in small groups. These groups bring forward the insights they believe best address the key challenge to all participants in plenary. After the end of the third workshop, the facilitator clusters insights into themes. Typically, an i4i Insights Discovery™ Insight Sprint generates up to 50 different insights and they cluster into four-to-six themes. The facilitator shares these with all participants before the final, action-planning workshop called INSPIRE.

INSPIRE – turning insights into action

The INSPIRE workshop typically runs up to a week after the INTEGRATE workshops. At the start of INSPIRE, all insights generated during INTEGRATE are reviewed and discussed. Participants then vote – using an app, in secret, so that the loudest or most persuasive voice does not sway opinion unfairly under so-called "group think" conditions (Janis, 1972) – on which clusters (or themes) of insights best address the key challenge set in the first, IMAGINE workshop. Using these themes and insights as their inspiration, individuals in small groups then rapidly develop a series of high-impact action plans. The small groups refine (and often merge, because of similarities) individual action plans, then share these with the whole group in plenary. The whole group maps these action plans onto a 2 × 2 matrix of implementation feasibility by potential impact. The group chooses the three action plans it believes are most promising and best address the key challenge, committing to bring them to life over the year ahead. Often, these data-driven, insight-rich action plans form part of other, established planning processes for – say – patient engagement already under way inside Novartis.

Piloting, refinement, codification and Cascade

The core team developed the i4i Insights Discovery™ methodology during 2020 and piloted it with a global team working in Novartis's ophthalmology franchise. The experience of the pilot led to refinements in the process – of individual exercises, of the flow of exercises within stages, and of the process as a whole. Following these refinements, the team codified the process end-to-end in a comprehensive User Guide, as well as developing all the materials required to facilitate the process, such as slide decks to run each stage and every workshop, exercise templates and examples of good practice.

With all necessary materials in place, the process was run with cross-functional teams in 2021 and 2022 across all Novartis franchises covering more than a dozen major disease areas, from leukaemia to cardiovascular disease, dry eye disease to kidney failure, multiple sclerosis to food allergy. Dozens more i4i Insights Discovery™ Insight Sprints are planned for 2023 and beyond. To institutionalize i4i Insights Discovery™ as the Novartis way to become more patient-centric, live "train the trainer" training courses have been delivered to more than 100 associates working in functions including patient engagement, insights and analytics and training design and delivery. The User Guide, all necessary materials and a series of bite-sized "how-to" training videos are made available to associates on the Novartis intranet.

Findings

The introduction of the Novartis i4i Insights Discovery™ process has changed how Novartis associates understand patients and care partners whose lives are affected by the diseases and conditions its drugs and therapies are designed to address. Since May 2020, the process has been created, piloted, refined and codified. At the end of the INTEGRATE and INSPIRE workshops, facilitators use anonymized questionnaires to collect feedback on the process. This is aggregated and used to specify changes and updates to the process, which are made on an annual basis.

More than 15, cross-functional teams in every one of the company's franchises – as well as in Novartis's early-stage, Global Drug Development division – have now taken part in an Insight Sprint. These teams represent a total of more than 200 senior associates, exposed to and deeply involved in this innovative insight discovery process. Each team has surfaced and articulated genuine patient and care partner insights specific to their disease or condition, insights that address a pressing key business question.

The process has enabled all teams to elevate existing research outputs into a more "profound and useful", more insightful understanding of the patient reality, allowing them to do more with less. These insights have been used to develop high-impact action plans that are designed to improve patient health outcomes, as well as quality of life for both patients and care partners. It is currently too early to determine the extent to which the new patient engagement programs have achieved these goals quantitatively. We will report on metricated outcomes in future papers.

Participant feedback

At the end of the three INTEGRATE workshops and following the final INSPIRE workshop, facilitators routinely administer confidential questionnaires. The most relevant findings are summarised in Table 1, below. The answers to the first four questions in the table – which were asked as counts or on Likert-type scales – have all been harmonised to be an odds ratio, with 0.00 representing "not at all likely to say this" and 1.00 "completely likely to say this". Across the 70 participants who provided complete feedback, 95% believe i4i Insights Discovery™ to be "an effective and efficient way to discover patient insights", whereas 90% believe that it "has helped the team to develop and articulate genuine patient insights". A total of 83% said that the insights created during the process had enabled them

Question	Scale/Range	Max	Mean
Do you think that the process is an effective and efficient way to discover patient insights?	0.00 (not at all) 1.00 (completely)	1.00	0.95
Do you believe that the process has helped the team to develop and articulate genuine patient insights?			0.90
Have the insights created during the process enabled you and your colleagues to develop action plans that you believe will have genuine impact on patients' lives?			0.83
Are you committed to the high-impact action plans developed at the end of this process?			0.85
On a scale of 1–10, how likely would you be to recommend the process to a colleague? (The Net Promoter Score)	0–6 (detractor) 7–8 (neutral) 9–10 (promoter)	10.00	8.61

Source: Authors' own work

Table 1. Participant feedback on taking part in i4i Insights Discovery™ Insight Sprints (n = 70)

and their colleagues to develop action plans that they believe will have a genuine impact on patients' lives, action plans to which 85% are committed at the end of the process. On the Net Promoter Score (NPS) question (Reichheld, 2003), the average response – given on a slider – was 8.61 out of 10.00, just the wrong side of the "Promoter" side of the NPS 8/9 boundary.

Participants were given the opportunity to describe – in free text answers – how they found the process, what it enabled them to achieve and what they thought about the way insights were leveraged to develop high-impact action plans, particularly in patient engagement. A selection of responses follow:

> The process enabled people to look at the patient journey through the eyes of the patient, identifying key pain points to solve for. The ideas that came out of the ideation and problem solving were well thought out, multi-stakeholder in nature, and adaptable/scalable.

> We had a lot of information before, but had never been able to distill it down to foundational patient insights.

> All of our solutions had the patient as the primary focus, and we involved other stakeholders only as a means of improving the treatment experience for patients. In this way, we can empower patients to live their lives to the fullest – addressing our key challenge.

> The process really works; it's a systematic methodology for obtaining patient insights. It puts you in a different frame of mind – provided you set aside enough time for robust discussions and for getting workflows going from the insights that come forward.

The process was created, piloted, refined and codified under successive COVID lockdowns, designed to be every bit as effective and dynamic online as in the room. This mode of delivery will be necessary in the long-term in any case, as three of Novartis's global hubs are in Switzerland, the USA and India. It is neither time efficient nor cost effective to bring participants from these three time zones together for a series of half-day workshops held over a two-month period. The first dozen Insight Sprints were run entirely online using Microsoft Teams, and, although post-pandemic country teams are starting to run Sprints in person – at least in part – the fact that the process was designed to run virtually as well as in the room makes it more attractive and useable in the long-term.

Given the flux and unpredictability of the past two years, the long-term trend for increased working from home and the ongoing disruption of corporate realignment and reorganization, the intensive, immersive and intimate nature of the process has also evidently had positive impact on strengthening existing teams and building new team relationships. The following two quotes are typical of the feedback, reflecting one side-benefit of the process being its ability to bond participants together via a common purpose:

> It's an incredibly collaborative process, designed for every individual to contribute their unique perspective. It has been so well structured, with each stage leading to focused outcomes, getting us closer to the goal of patient-centric tactics.

> A great collaborative experience that can help build team relationships and understanding while exploring patient insights. A unique approach that can be leveraged to digest patient and healthcare practitioner research to help stimulate further ideation on patient solutions.

Training feedback

Of more than 100 senior Novartis associates who have been trained in how to run i4i Insights Discovery™, more than two-thirds completed post-training evaluation questionnaires. Their

ratings of the training are summarized in Table 2. The scores are averages, with each question scored out of five, with a score of four ranked as "Very good" and five as "Excellent".

Conclusions

Novartis set out in 2020 to develop an innovative, effective, replicable way of understanding the patient reality better to help improve adherence and compliance to drug regimens and so improve patient outcomes. To become ever-more patient centric, the company sought to introduce an evidence-based – yet creative – methodology to enable cross-functional teams in every franchise to surface and articulate genuine patient insights. To meet patient needs better, it sought to bring the voice, experience and perspective of patients to the heart of drug development, design and delivery. The company wanted to square the circle by creating and institutionalizing a fundamentally insightful thinking approach into its resolutely analytical culture. The goal was to enable brand and product teams, disease by disease, to make more of the research outputs they commission by identifying and capitalizing on alignments and synergies between different data sets and reports.

Meaningful insights into patients' lives can remain hidden in plain sight. Often, we do not need to do more research, patient and care partner segmentation or social media listening. We need to make better use of what we already know, shuffling and reshuffling "old and old to make something new". At a time of tightening budgets and demands from leadership to demonstrate better impact, this paper has sought to demonstrate how it has been possible to do more with less; to turn existing research outputs into a more profound and useful understanding of what it means to live with specific diseases or conditions from all perspectives.

Although the process was designed in response to a desire from leadership to become increasingly patient-centric, the psychological and cognitive underpinnings of the process in fact mean that it is stakeholder agnostic. i4i Insights Discovery™ has already been used to develop better-informed, evidence-based action plans, rooted in a deeper understanding of patients and care partners. More research is necessary to assess how the methodology performs when looking to better characterize health-care professionals and health-care systems.

There are two additional areas where further research can assess the impact and efficacy of the process. The first requires Novartis to validate formally the patient insights generated by the process with patients. While many of the insights and clusters/themes of insights

Question	Score	Ranking
What did you think of this course, designed to train you in how to facilitate the process	4.09	"Very good"
What did you think of the quality of the training materials (Slides, User Guide, animations etc.)	4.28	"Very good"
How did you find the creative exercise between the two workshops – recording and uploading a two-minute video of yourself explaining the process, which you then performed to your peers?	4.30	"Very good"
As a result of this training course, how do you feel about taking on the task of facilitating the process?[1]	4.28	"Very good"

Notes: [1]Participants in the training also said: "I'll need to refer to the User Guide, presentations, and templates, but the course gave me a good grounding in the whats, the whys, and the hows of i4i"
Source: Authors' own work

Table 2. Summary of facilitator training

have been informally validated with various patient advocacy groups, a more rigorous program of testing and validation of insights created would give teams even greater confidence that the process gives them a better understanding of the patient reality. The second requires a comprehensive impact assessment of the new patient engagement strategies developed from the key challenges and resulting insights, understanding whether these insight-rich action plans do achieve reliable and sustainable impact on compliance and adherence and – in the end – enhance patient outcomes and so quality of life.

The Novartis i4i Insights Discovery™ process has already greatly benefitted Novartis. This is why the company is sharing its learnings to enable others so that they can benefit from this innovative approach. It is Novartis's intention to make i4i Insights Discovery™ a gold standard in insight discovery.

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