ESG Investor Event
September 30, 2021
Disclaimer

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ESG Investor Event: Speaker profiles

Vas Narasimhan  
Chief Executive Officer

Klaus Moosmayer  
Chief Ethics, Risk and Compliance Officer

Karen Hale  
Chief Legal Officer

Lutz Hegemann  
Group Head of Corporate Affairs & Global Health

Racey Muchilwa  
Head Sub-Saharan Africa

Patrice Matchaba  
Head of US Corporate Responsibility & President, Novartis US Foundation
Vas Narasimhan
Chief Executive Officer

Novartis strategy
Materiality
ESG integration
Summary

1. Novartis believes a focus on material ESG factors and an inspired, curious and unbossed culture will drive better performance.

2. Patient health and safety, access, innovation, ethical business are highest ranked in Novartis’ latest Materiality Analyses. Human capital also scored highly.

3. Our integrated, sustainable business models and Access Principles help address access, the greatest unmet need in healthcare.

4. We are on track to triple number of patients reach in LMICs using our “Strategic Innovative Therapies” and have delivered 1bn courses of antimalarial treatment since 1999.

5. Our Sub-Saharan Africa model helps us reach underserved populations, is sustainable and provides useful learnings to address the root causes of health inequities in US.

6. We relentlessly track our progress against challenging ESG-related targets, course correct as needed. Targets are incorporated into executive management compensation.

Our purpose is to reimagine medicine to improve and extend people's lives

We use science-based innovation to address some of society's most challenging healthcare issues

We discover and develop breakthrough treatments and find new ways to deliver them to as many people as possible
ESG is integrated into the Novartis strategy and is critical to delivering on our purpose

Delivering on stated purpose whilst balancing and integrating different components of capital\(^1\) to create stakeholder value

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1. Colin Mayer, Nov 2018, Prosperity 1\(^{st}\) edition
We are a focused medicines company powered by technology leadership in R&D, world-class commercialization, global access, data science

**Where to play | our focus**

- Strengthen our 7 core therapeutic areas
- Advance our 5 leading technology platforms
- Accelerate our 4 priority geographies
- Transform Sandoz

**How to win | our five priorities**

- Embrace operational excellence every day
- Unleash the power of our people
- Deliver transformative innovation
- Go big on data and digital
- Build trust with society
We believe that effective ESG management reduces risks, increases impact on society and provides superior financial returns...

Effectively managing ESG

1. Reduces risk
2. Adds impact / value
3. Right thing to do

Companies with superior adherence to material ESG factors provide superior financial returns

![Performance on material and immaterial ESG issues](image)

...ultimate aim of ESG is creating a lasting IMPACT

“ESG funds are measured against benchmarks for financial returns; they are not measured on the impact they deliver”

Investor
Impact mechanisms:
Capital allocation
Indirect impacts
Shareholder engagement

World
Impact
Innovative/quality medicines to as many people as possible

Impact is change beyond what would have happened anyhow and needs to be intentional and measurable.

Impact measurement is in its nascent phase, Novartis partnering with leading groups on subject (see appendix slide 48)


NOVARTIS | Reimagining Medicine
Novartis impact in practice: Sustainability-Linked Bond
Delivering change that is intentional and measurable

1st of its kind Sustainability-Linked Bond with 2025 targets...
Embedding access targets into the core of our business operations

Strategic innovative therapies:
+200% patients reach in LMICs

Global health flagship programs:
+50% patients reach in LMICs
Patients reached, m

<table>
<thead>
<tr>
<th></th>
<th>2019 actual</th>
<th>2020 actual</th>
<th>2021 Aug</th>
<th>2025 Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic innovative</td>
<td>0.5</td>
<td>0.7</td>
<td>0.8</td>
<td>1.6</td>
</tr>
<tr>
<td>therapies:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global health</td>
<td>15.1</td>
<td>43.9</td>
<td>28.0</td>
<td>22.6</td>
</tr>
<tr>
<td>flagship programs:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+50% patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>reach in LMICs</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

... reinforces our commitment

1. Materiality Analyses
2. Alignment of ESG and financing
   Bond investors supporting
   Novartis ESG targets
   (as previous slide)
3. Bondholders entitled to receive higher interest if targets not met³
4. Transparency in reporting in Novartis in Society Report

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1. As of end Aug 2021
2. 12 months rolling patient reach numbers
3. The bond will feature a coupon step up of 25 basis points, which will be payable to investors commencing with the first interest payment date after 31 December 2025 in case Novartis fails to reach one or both of the Patient Access Targets.
We use stakeholder materiality analyses to determine our ESG focus and priorities

Where to play | our focus

**Priorities** ranked highest by external / internal stakeholders in *materiality analyses 2021*

- Patient health and safety
- Access to healthcare
- Innovation
- Ethical business practices
- Human capital
- Good governance
- Sustainable financial performance
- Environmental sustainability

How to win | our ESG targets (select)

- 100% of launches with global access strategy annually
- Sustainability-linked bond 2025 patient access targets
- Invest $100m to advance R&D of next-generation anti-malarials by 2023
- 100% of Ph3 studies with US participation to have diversity & inclusion principles annually
- Gender balance in management by 2023
- NEW Net zero by 2040 Carbon (across value chain), plastic and water neutrality by 2030
2021 ESG progress

1bn

> courses of antimalarial treatment delivered since 1999

Sustainably delivering access

across the income pyramid in SSA

Pioneering access solutions

Leqvio® population health in UK

On track on our target:

+200% patients reach in LMICs with Strategic Innovative Therapies by 2025

On track to achieve

100%

Renewable energy on our operations in Europe, US by 2025

Gender pay gap 3.3% vs. 21% benchmark

Gender balance 45% in management

New target for clinical trial diversity:

Embed diversity & inclusion principles in 100% of Ph3 studies with US participation

#2 in 2021 Access to Medicines Index: Novartis the only company with equitable access strategies in LICs across its portfolio

LMICs – Low and low-middle income countries

SSA – Sub-Saharan Africa

1. All management levels
## Sector leading performance
across various ESG ratings providers

<table>
<thead>
<tr>
<th>Agency</th>
<th>Rating</th>
<th>Score</th>
<th>Industry rank</th>
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</thead>
<tbody>
<tr>
<td>SUSTAINALYTICS</td>
<td>Risk score</td>
<td>▲ 17</td>
<td>1 / 432</td>
</tr>
<tr>
<td></td>
<td>Controversy level</td>
<td>▼ 3</td>
<td></td>
</tr>
<tr>
<td>ISS ESG</td>
<td>ESG score</td>
<td>▲ B</td>
<td>1 / 433</td>
</tr>
<tr>
<td>FTSE4Good</td>
<td>ESG score</td>
<td>▼ 4</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Score</td>
<td>▲ 4.18</td>
<td>2 / 20</td>
</tr>
<tr>
<td>CDP</td>
<td>Climate score</td>
<td>▲ A</td>
<td>Leader for climate</td>
</tr>
<tr>
<td></td>
<td>Water score</td>
<td>▲ A</td>
<td>Leader for water</td>
</tr>
<tr>
<td>REFINITIV</td>
<td>D&amp;I Index score</td>
<td>▼ 73.25</td>
<td>2 / 9</td>
</tr>
<tr>
<td></td>
<td>ESG score</td>
<td>▲ 86</td>
<td>10 / 317</td>
</tr>
<tr>
<td>MSCI</td>
<td>ESG score</td>
<td>▲ A</td>
<td>10 / 20</td>
</tr>
<tr>
<td></td>
<td>Controversy score</td>
<td>▲ 1</td>
<td></td>
</tr>
<tr>
<td>S&amp;P Global</td>
<td>ESG score</td>
<td>▲ 73</td>
<td>8 / 83</td>
</tr>
</tbody>
</table>

See appendix for footnotes
Access to healthcare
Innovation

Lutz Hegemann
Group Head of Corporate Affairs & Global Health

Access to healthcare
Innovation
Novartis tackling the highest unmet needs in healthcare: access and inequities

2 billion
Patients do not get medicines they need\(^1\)

<table>
<thead>
<tr>
<th>High-income countries</th>
<th>Non-communicable disease (NCD)</th>
<th>Communicable disease (CD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Health inequity leads to varying quality of care based on ethnicity, socio-economic factors</td>
<td>In US, 40% more black people have died from COVID-19 vs. white people(^3)</td>
</tr>
<tr>
<td></td>
<td>CVD is the leading cause of death in US, highest risk among non-Hispanic Black populations and in areas with highest rates of poverty(^2)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LMICs</th>
<th>(~300k) infants are born annually with SCD, 8 out of 10 are born in sub-Saharan Africa(^4)</th>
<th>LMICs disproportionately affected by COVID-19</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(&gt;3/4) of CVD deaths take place in LMICs(^5)</td>
<td>(274k) children die annually of malaria(^6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(390m) dengue virus infections / year(^7)</td>
</tr>
</tbody>
</table>

CVD – Cardiovascular disease    LMICs – Low/middle-income countries    See reference section in appendix for sources

\(^1\) CVD – Cardiovascular disease
\(^2\) LMICs disproportionately affected by COVID-19
\(^3\) In US, 40% more black people have died from COVID-19 vs. white people
\(^4\) ~300k infants are born annually with SCD, 8 out of 10 are born in sub-Saharan Africa
\(^5\) \(>3/4\) of CVD deaths take place in LMICs
\(^6\) \(274k\) children die annually of malaria
\(^7\) \(390m\) dengue virus infections / year

Non-communicable disease (NCD)
Communicable disease (CD)
Our approach to access evolved from donations to sustainable business models and business-integrated solutions

2000
Sole donor to the WHO of multidrug therapy for leprosy

2001
Antimalarial Coartem®
(no-loss strategy)
Crossed 1bn treatments in 2021

2008
Healthy Family¹

2014
Local innovative brands in LMIC

2015
Novartis Access²

2017
Novartis Access Principles

2019
New strategy for Sub-Saharan Africa

2020
Sustainability-linked bond

2021
Co-create solutions to address root causes of health inequity in US

Donations  No-loss strategy  Sustainable business models, business-integrated solutions

¹. Education / medicines to patients at the bottom of the income pyramid.
². 15 on-off patent medicines for NCDs.
Novartis Access Principles: Guide our efforts to deliver innovative and quality medicines to as many people as possible

Our Access Commitment

Driving social impact
Systematically integrating access strategies in how we research, develop and deliver all our new medicines
100% of launches with global access strategy

Novartis Access Principles

- Systematically assess portfolio against unmet needs
  - Trial diversity strategy (initially focused on US)
  - Adaptive development: Modification of existing medicines for vulnerable populations
- Effective affordability strategies and innovative solutions
  - Tiered pricing framework
  - Sub-Saharan Africa strategy
  - Emerging Market Brands
- Lower local barriers to healthcare delivery
  - One Novartis Health System Strengthening (HSS) framework
  - Novartis US Foundation made disparities of care a priority
Novartis Access Principles in practice: Leqvio® population health
Extending innovation to areas of high unmet need in line with our Access Principles

**Significant unmet need**

- ASCVD a major contributor to CV death – largest cause of mortality
- >3/4 of CVD deaths take place in LMICs
- Highest numbers not in goal in low/middle as well as high-income populations

**Novartis Access Principles**

- Extending innovation
- Driving efficiency

**Pricing responsibly**

- Tiered pricing, EMBs: 14 launches in LMIC/UMIC within 18 months of 1st EU launch, 39 registrations expected by 2023

**Working in partnerships with healthcare systems**

- Example: Population health
  1st of its kind population health management approach in UK proactively identifying individuals “at highest risk”
- Other Healthcare systems initiatives being explored in >5 high and LMICs

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LMIC – Low/middle-income countries  ASCVD – Atherosclerotic cardiovascular disease  1. Including Argentina, Georgia, Belarus, Azerbaijan, Chile, Ukraine, Mongolia, Thailand, Mexico, Colombia, Philippines, Uzbekistan, Kazakhstan, Brazil
Novartis Access Principles in practice: Emerging Market Brands

Emerging Market Brands (EMBs) improve speed to market for LMICs, patient reach and business model sustainability

Business sustainable

Tiered Pricing Framework

100% of launches have global access strategy (incl. developed countries & LMICs)

3-year CAGR 2017-20

Patient reach +52%

Sales USD +55.5%

EMB strategy for all our major brands

Launch time lag in LMICs <12mos

<table>
<thead>
<tr>
<th>Brand</th>
<th>vs first launch in Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entresto</td>
<td>12 months</td>
</tr>
<tr>
<td>Cosentyx</td>
<td>10 months</td>
</tr>
<tr>
<td>LeoVio</td>
<td>7 months</td>
</tr>
<tr>
<td>Beovu</td>
<td>7 months</td>
</tr>
<tr>
<td>Jenius</td>
<td>6 months</td>
</tr>
<tr>
<td>KISQALI</td>
<td>5 months</td>
</tr>
<tr>
<td>Aimovig</td>
<td>0 month</td>
</tr>
<tr>
<td>PIGRAY</td>
<td>-1 month</td>
</tr>
</tbody>
</table>

Previous time-lag

24-48 months between launch in developed economies vs. LMICs

Example: Entresto® addresses a major global health concern in LMICs

Globally: 26m people affected by heart failure

LMICs: Increasing burden driven by surge in prevalence of etiological factors (hypertension, diabetes, obesity, lifestyle changes, etc.)

#1 growth driver in LMICs through EMBs

2020 Entresto® in LMICs

- Entresto® EMBs in 42 countries, contributing to 57% of Entresto® patient reach in LMICs
- Patient reach: ~470k, +47% vs. PY
- Sales: +50% vs. PY

See appendix for definitions and references
Novartis Access Principles in practice to address unresolved global health challenges

**Malaria | 229m cases across 87 countries**
Reached 1bn treatment courses of Coartem®
Ganaplacide / lumefantrine SDF met Ph2b primary study objective
Committed USD 100m in R&D until 2023 in novel anti-malarials

**Sickle Cell | 250m carry the gene**
~10k patients being treated with hydroxyurea in Ghana and East Africa
Launched gene therapy R&D collaboration with BMGF

**Chagas | Affects ~6m people worldwide**
1st of its kind clinical study in Latin America

**Leprosy | 200k new cases annually**
Reached >7m patients
Renewed commitment with WHO: extend Multi Drug therapy donation through end 2025

BMGF – Bill and Melina Gates Foundation  SDF – Solid dispersion formulation  See appendix for references

AMR
Balanced, cross-sectorial approach

COVID-19
Manufacturing agreements, investigating the DARPin platform

HP Enterprise collaboration to accelerate the use of digital technologies in Global Health

BMGF – Bill and Melina Gates Foundation  SDF – Solid dispersion formulation  See appendix for references
Despite vaccinations, we will need therapeutics to prepare for future pandemics

Example: Investigating the DARPin platform, ensovibep

Characteristics suitable for the pandemic

Option deal with Molecular Partners for two DARPin® candidates (anti-viral protein therapeutic)

Lead molecule ensovibep (MP0420) in Ph2

3 DARPin® molecules binding to the same viral spike protein:
- **High potency**
- **Protection against viral drift**

Multi-domain binding can maintain affinity to current / **potential new variants**

**Enhanced half-life** (two human serum binding sites)

Small size for potential **lower/more convenient dosing**
Advancing our program to combat AMR, an unprecedented challenge to global health

**10m**

estimated deaths/year by 2050

> **4.2m**
> Africa

> **4.7m**
> Asia

> **0.4m**
> Latin America

**Taking a balanced, cross-sectorial approach to AMR via**

Novartis Global health: access, community-based healthcare capabilities in LMICs

Sandoz: #1 global supplier of quality generic antibiotics (by volume)

<table>
<thead>
<tr>
<th>1</th>
<th>Responsible manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integral to our environmental targets: minimization of antibiotic residues especially into water bodies, reducing waste</td>
<td></td>
</tr>
<tr>
<td>Manufacturing site in Austria is hub of last vertically integrated antibiotics production chain in Europe</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>Responsible use: advocacy, surveillance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological solutions for advocacy, surveillance, education</td>
<td></td>
</tr>
<tr>
<td>HCP / patient education, user-friendly packs, awareness campaigns, safe drug disposal</td>
<td></td>
</tr>
<tr>
<td>Social &amp; Access program expansion (WASH)</td>
<td></td>
</tr>
<tr>
<td>New diagnostic tools collaboration with ARES Genetics on Molecular Diagnostics &amp; Surveillance</td>
<td></td>
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<table>
<thead>
<tr>
<th>3</th>
<th>Access to quality antibiotics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthening high quality, affordable antibiotics portfolio (e.g. cefuroxime, ceftazidime acquisition to complement our leading position as Penicillin’s manufacturer)</td>
<td></td>
</tr>
<tr>
<td>Adaptable portfolio for tailored AMR response</td>
<td></td>
</tr>
<tr>
<td>Pediatric-specific formulations</td>
<td></td>
</tr>
<tr>
<td>Stable formulations for LMIC</td>
<td></td>
</tr>
</tbody>
</table>

**Selected partners:**

- **amrnow**
- **medicines for all**
- **CREW Europe**
- **ELPIA**
- **GARDP**
- **ARES Genetics**

**4 Innovation & adaptive development**

Focusing on areas where we can really make a difference. AMR Action Fund
Our R&D pipeline is comprised of novel compounds to address needs in underserved populations

<table>
<thead>
<tr>
<th>Indication</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19</td>
<td>SARS-CoV-2</td>
</tr>
<tr>
<td>Malaria</td>
<td>Unknown/novel</td>
</tr>
<tr>
<td>Malaria</td>
<td>PfATP4</td>
</tr>
<tr>
<td>Leishmaniasis</td>
<td>Proteasome</td>
</tr>
<tr>
<td>Severe malaria</td>
<td>PfATP4</td>
</tr>
<tr>
<td>Malaria</td>
<td>Unknown/novel</td>
</tr>
<tr>
<td>Dengue</td>
<td>NS4B</td>
</tr>
<tr>
<td>Cryptosporidiosis</td>
<td>PI4K</td>
</tr>
<tr>
<td>Malaria</td>
<td>Unknown/novel</td>
</tr>
<tr>
<td>COVID-19</td>
<td>MPro</td>
</tr>
<tr>
<td>Chagas disease</td>
<td>CLK1</td>
</tr>
<tr>
<td>Chagas disease</td>
<td>Proteasome</td>
</tr>
<tr>
<td>Malaria</td>
<td>PI4K</td>
</tr>
<tr>
<td>Malaria radical cure</td>
<td>Hypnozoite</td>
</tr>
</tbody>
</table>

**Discovery**
- Ensovibep
- Ganaplacide/lumefantrine
- Cipargamin²
- LXE408
- Cipargamin IV
- INE963
- EYU688
- EDI048

**Preclinical**
- **First application of DARPin® therapeutics to treat COVID-19**
- **First novel malaria drug candidate to reach advanced trials in decades**
- **Fastest acting malaria drug candidate to reach advanced clinical trials**
- **Promising drug candidate for leishmaniasis; current options can be toxic and poorly effective**
- **Potent drug candidate for severe malaria**
- **Fast-acting malaria drug candidate with potential for single dose cure**
- **Potential first dengue-specific therapy; has activity across serotypes**
- **Most advanced drug candidate designed specifically for cryptosporidiosis**

**Phase 1**

**Phase 2a**

**Phase 2b/3**

1. Collaboration with Molecular Partners.
2. Ongoing work to determine optimal combination drug
Racey Muchilwa
Head Sub-Saharan Africa

Patrice Matchaba
Head of US Corporate Responsibility and President, Novartis US Foundation

Select ESG efforts in Sub-Saharan Africa and United States
Our Sub-Saharan Africa model is delivering a sustainable and profitable model to reach underserved populations

Pivot from margin to patient reach to drive access

Sustainably delivering access across the full income pyramid; operating at scale through a single Novartis organization

Select highlights

High-impact partnerships
with key public and private sector stakeholders to accelerate access to medicines

FOR EXAMPLE:

- Clinton Health Access Initiative: expand access to Oncology patients
- Kenya Medtronic partnership (Afya Dumu): screening / diagnostics of diabetes, hypertension
- Academia to build capacity and capabilities
- Ghana SCD partnership: hydroxyurea now prioritized under healthcare policy

Strong H1 results

<table>
<thead>
<tr>
<th>Patient reach, m</th>
<th>Net sales USD, m</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 2020</td>
<td>H1 2021</td>
</tr>
<tr>
<td>9.9</td>
<td>59.6</td>
</tr>
<tr>
<td>+29%</td>
<td>+22%</td>
</tr>
<tr>
<td>H1 2021</td>
<td>12.8</td>
</tr>
</tbody>
</table>

1. Ratio of doctors to patients in Sub-Saharan Africa ~1:10k vs. 1:1k recommendation by the WHO. Collaboration with University of Barcelona on Interlife Program Cardiff University, University of Nairobi on Echo for Life
**Addressing root causes of health inequities in the US: Increasing diversity among trial investigators, patients and talent**

**Health disparities in the US**

~USD 93bn in excess medical care costs, USD 42bn in lost productivity / year \(^1\)

In US, 40% more black people have died from COVID-19 vs. white people \(^2\)

**Clinical trial diversity**

**Planned 10-year commitment with 27 HBCUs and other partners  \(^3\)**

USD 20m to empower 1,200 African American students

USD 13.7m to establish research centers

**New target**

Embedding diversity & inclusion principles in 100% of Ph3 studies with US participation

1. **Partnership Expansion**
   - e.g. LatinX, Native American communities

2. **Clinical Trial Centers of Excellence**
   - Contribute to improved health outcomes for people of color

3. **Research Center on Data Standards**
   - Inform diagnosis, clinical trial endpoints, and policy

4. **Center for the Impact of Environment & Climate on Health**

5. **Faculty Research Grants and Scholarships, Internships, & Mentorships**
   - Equitable access to high quality education and professional development

6. **Develop digital database**
   - Collect, analyze live data, facilitating progress tracking, transparency

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HBCU – Historically Black Colleges & Universities
National Medical Association

2. COVID Tracking Project and the Boston University Center for Antiracist Research
Klaus Moosmayer
Chief Ethics, Risk and Compliance Officer

Ethical business practices
Our program has three distinct pillars, covering nine focus areas, which are anchored in science

**Ethics**
Build a sustainable foundation
1. Ethics
2. Human Rights
3. Culture & Impact

**Risk**
Develop enterprise assurance standards
4. Enterprise Risk & Crisis Management
5. Enterprise Policy & Control Management
6. Third Party Risk Management

**Compliance**
Manage our compliance risks
7. Compliance Management System
8. SpeakUp Office
9. Centralized Monitoring & Remediation Team

*Anchored in behavioral, data, and decision science*
Our Code of Ethics was co-created by our associates and signals our commitment to ‘doing what’s right’

Novartis Code of Ethics\(^1\)

**Anchored in behavioral science,**
co-created by our associates for our associates

99% trained\(^2\), 122k visits to our Code of Ethics platform\(^3\)

177k visits\(^3\) to our “Decision Explorer” tool, 81% found the tool helpful in applying our ethical principles

**Ethics Conversation Toolkit** helps our leaders have open discussions on ethical dilemmas

**Continues to evolve:** New commitment on Patient Engagement added, effective as of Nov 2021

“Excellent foundation for revealing and avoiding biases and a roadmap for making difficult ethical decisions”

**Based on 2 key elements**

**1 Ethical principles**

define what “doing what’s right” means in the context of Novartis

**2 Clear statements on our commitment**
to doing what’s right across key areas nominated by our associates

**Supported by**

**Decision Explorer** and a suite of resources

---

\(^1\) Effective as of Sep 2020.  
\(^2\) Full cycle training in 2020. New cycle started Jul 2021 with 87% trained (as of end Sep 2021) open until year end.  
\(^3\) Since the launch in June 2020, Status: Sep 28 2021.
We have strengthened enterprise risk management by aligning our policies and controls with our risks

<table>
<thead>
<tr>
<th>Risks</th>
<th>Global Policies, Guidelines &amp; Standards</th>
<th>Internal Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common methodology for Enterprise Risk Management</td>
<td>Streamlined principles, rules, processes and internal controls</td>
<td>Ensures risks are mitigated to the extent reasonable</td>
</tr>
<tr>
<td>Functions responsible to identify business risks, mitigation actions</td>
<td>Global Policies &amp; Standards applicable to all associates</td>
<td>Embedded in business processes</td>
</tr>
<tr>
<td>Covered in Global Policies, Guidelines &amp; Standards</td>
<td>Global Guidelines applicable to specific Division, Function, Unit or roles</td>
<td>Creation of a harmonized control framework</td>
</tr>
</tbody>
</table>

Clear accountabilities and responsibilities create transparency and simplicity for risk and control owners

Improved governance and oversight of the assurance landscape across the whole organization

Harmonized methodology enables the business to manage risks more efficiently
We developed a risk-based framework for our Third-Party Risk Management (TPRM)

Our five principles guide our process and decision-making

**Principles**

- **One standard**
  - Maintain risks at an acceptable level

- **One owner**
  - Business owns the risk

- **One rule**
  - No risk assessment, no contract

- **One framework**
  - Use the TPRM process

- **One mindset**
  - Remain vigilant

**TPRM**
- Includes Health Care Organizations
- Health Care Professionals are included if they provide a service

**Third Party Risk Areas covered on buy side**: Anti-Bribery, IT Security (3PAS), Labor Rights, Animal Welfare, Health, Safety & Environment, Data Privacy, Trade Sanctions

**Human Rights aspects**
- Integrated into TPRM framework

**100% of new suppliers**
- Have undergone risk assessment

---

1. Suppliers, M&A targets, in-licensing targets
2. Human Rights embedded in Labor Rights
Good governance

Karen Hale
Chief Legal Officer
We will continue to innovate on governance and transparency, in response to feedback from our stakeholders

**Governance structures...**

**Board level governance of ESG**

**Board committees**
Governing, Nomination & Corporate Responsibility (structures evolving)
Audit & Compliance
Risk

**Leadership oversight**
Trust & Reputation Committee – subcommittee of the Executive Committee

**... further strengthened**

Evolving in 2020/2021

**ESG Management Office**
Driving strategy, metrics, targets

**ESG Council**
Cross-functional: ensuring integration of ESG

**Chief (Environment) Sustainability Officer**

**Increasing transparency, preparing for convergence of financial and non-financial reporting**

**Integrated Reporting** (2022 report or later) in line with external disclosure standards

**ESG integration into finance** (2021)
Set up non-financial reporting system and governance for robust auditable ESG data

---

1. One senior representative by unit and function; 2. Incl. Carbon Disclosure Project (CDP), Climate Disclosure Standards Board (CDSB), Global Reporting Initiative (GRI), International Integrated Reporting Council (IIRC), Sustainability Accounting Standards Board (SASB)
Vas Narasimhan
Chief Executive Officer

Human capital
Environmental sustainability
Future ambition
Transitioning to an inspired, curious, unbossed organization to develop individuals, teams and drive superior company performance

“If leaders grow, teams grow, and the company grows” | Vas Narasimhan, CEO

1. Source: Quarterly Glint Engagement Survey Scores  
2. Source: Team Perspectives, May 2021, 64k participants
Making strong progress on additional key human capital parameters, including our supply chain

<table>
<thead>
<tr>
<th>Commitment</th>
<th>Progress / aspiration</th>
<th>Select initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender pay gap close by 2023</td>
<td>+3.3% Mean (vs. 3.6% in 2020, +21% benchmark)¹</td>
<td>Removing bias, increasing pay transparency (16 countries), monitoring pay equity</td>
</tr>
<tr>
<td></td>
<td>-2.3% Median (vs. -3.1% in 2020, +19% benchmark)¹</td>
<td></td>
</tr>
<tr>
<td>Gender balance in management by 2023</td>
<td>46% in middle management³ (vs 45% in 2020, 36% benchmark²)</td>
<td>Included again in Bloomberg Gender-Equality Index</td>
</tr>
<tr>
<td></td>
<td>39% in senior management³ (vs 38% in 2020, 28% benchmark²)</td>
<td>Diverse candidate panels and slates</td>
</tr>
<tr>
<td></td>
<td>35% in exec management³,⁴ (vs 32% in 2020, 21% benchmark²)</td>
<td>Gender neutral paid parental leave</td>
</tr>
<tr>
<td>Supply chain</td>
<td>In 2021 Strengthen US Supplier Diversity programs especially for small and diverse suppliers⁵</td>
<td>3-year strategy to strengthen supplier diversity across further markets</td>
</tr>
<tr>
<td>D&amp;I principles upheld in all TPRM⁶ by 2023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Racial equity²</td>
<td>90%+ candidate slates now gender diverse in US</td>
<td>97% completion rate of 1st company-wide D&amp;I e-training</td>
</tr>
<tr>
<td></td>
<td>80%+ are diverse in racial/ethnic representation in US</td>
<td>Annual &quot;Day of Reflection&quot; with 6k+ participants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New US hiring guidelines</td>
</tr>
</tbody>
</table>

¹ Global data, as of Dec 31, 2020
² As of June 30, 2021
³ Novartis Top Leaders population ~300 incl. the Executive Committee
⁴ Bloomberg Gender-Equality Index
⁷ Third Party Risk Management
**Committed to achieving net zero: with clear plans, milestones and metrics**

**Scope 1, 2**
27% reduction vs. PY (in mtCO₂)

<table>
<thead>
<tr>
<th>Year</th>
<th>Scope 2</th>
<th>Scope 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td>2017</td>
<td>0.9</td>
<td>0.5</td>
</tr>
<tr>
<td>2018</td>
<td>0.9</td>
<td>0.4</td>
</tr>
<tr>
<td>2019</td>
<td>0.9</td>
<td>0.4</td>
</tr>
<tr>
<td>2020</td>
<td>0.7</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Carbon neutral in our own operations by 2025

**Scope 3 challenge**
11% reduction vs. PY¹ (in mtCO₂)

<table>
<thead>
<tr>
<th>Year</th>
<th>Scope 3 new methodology</th>
<th>Scope 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>5.7</td>
<td>5.3</td>
</tr>
<tr>
<td>2017</td>
<td>5.7</td>
<td>5.3</td>
</tr>
<tr>
<td>2018</td>
<td>5.5</td>
<td>5.3</td>
</tr>
<tr>
<td>2019</td>
<td>6.1</td>
<td>5.3</td>
</tr>
<tr>
<td>2020</td>
<td>5.4</td>
<td>5.3</td>
</tr>
</tbody>
</table>

7.0 total with new methodology

Carbon neutral across our value chain by 2030
Net-zero across our value chain by 2040

¹. Methodology used to calculate Scope 3 emissions in 2016 was aligned with Science Based Targets validation criteria which required targets to cover at least 2/3 of total mandatory scope 3 emissions as defined in Tae 5.4 of the GHG Protocol Scope 3 standard. In 2020, Novartis decided to further improve completeness, transparency and accuracy to cover more than 90% of overall scope 3 emissions.

**Select initiatives across scope 1,2,3**

- **Drive efficiency** in supply chain e.g. electrification of thermal energy loads
- **Optimize** vehicle efficiency; warehouse consolidation and logistics
- **Consolidate** our supply chain to preferred suppliers, reviewing top 1000 by 2025
- **100% renewable** energy on track in EU, US

6. **VPPAs**

7. **Solar & wind projects in Spain and Texas**

---

**Novartis | Reimagining Medicine**

ESG investor event | September 30, 2021
Climate change will increasingly challenge healthcare systems and patient needs

Greatest threat to public health
Science is unequivocal: increase of 1.5°C above pre-industrial average and continued loss of biodiversity risk catastrophic harm to health that will be impossible to reverse

Equity
Consequences of environmental crisis fall disproportionately on communities that have contributed least to the problem and are least able to mitigate the harms

For example: Dengue
Incidents per 100,000 population¹

- 488% in Brazil
- 500% in Singapore
- 1200% in Cambodia
- 297% in Vietnam

Source: NEJM Editorial: Call for Emergency Action to Limit Global Temperature Increases, Restore Biodiversity, and Protect Health.¹

Our efforts
Changing epidemiology of neglected tropical diseases
Dengue (ME-78-OH90), malaria (KAF156), Chagas (Entresto®)

Medicine portfolio responding to emerging changes e.g. respiratory, cardiovascular, renal

Collaborating to build health system resilience
With universities (e.g. MIT, Morehouse), identify solutions to climate issues that disproportionately affect the health of communities of color

Biodiversity
Forestry programs across 3 continents

Evaluating business-integrated solutions to both mitigate and adapt to a more variable climate while enabling health system resilience

On track to meet our ESG aspirations, with efforts aligned to our materiality analysis

**Short term**

**Innovation**
- 100% of Ph3 studies have evaluated D&I principles (US)
- Progress development of new malaria compounds¹ and Chagas-related HF trial²
- Invest USD 100m in R&D for next-generation anti-malarials by 2023

**Access to healthcare**
- 100% of new launches with global access strategy
- Expand Africa SCD program to 10 countries by 2022
- +50% increase in our Flagship Program³ reach by 2025³
- +200% increase in strategic innovative therapies patient reach in LMICs by 2025³

**Ethical business practices**
- 100% Code of Ethics training completion rate
- Integrate human rights into third-party risk assessments in scope
- Enhance external reporting on anti-bribery by 2022
- Be recognized in the sector for human rights

**Future ambition**
- Be recognized in the sector for human rights

**Mid to long term**

**Human capital**
- Committed to paying a living wage
- Close gender pay gap by 2023
- Gender balance in management by 2023
- Invest USD 100m in learning over 5 years from 2019

**Environmental sustainability**
- Carbon neutral in own operations by 2025
- Waste disposal reduced by half by 2025
- No water quality impacts from manufacturing effluents by 2025
- Full Carbon, Plastic and Water Neutrality by 2030
- Net-zero by 2040

---

1. KAF156, KAE609, COA566
2. PARACHUTE-HF trial
3. vs. 2019 baseline; target linked to newly issued sustainability-linked bond
4. Flagship programs: Malaria, Leprosy, Chagas, Africa Sickle Cell

LMIC – Low and low-middle-income countries
D&I – Diversity & Inclusion
SSA – Sub-Saharan Africa
HF – Heart failure
SCD – Sickle cell disease

ESG investor event | September 30, 2021
Companies that **focus** on material ESG factors have **better** **financial performance**

Appendix

ESG integration and reporting
Materiality analysis and impact measurement
Access principles
Global health and innovation
Health systems strengthening
Human capital
Culture
Diversity and inclusion
Responsible supply chain incl. human rights
Ethics, risk and compliance
Embedding ethics
Risk and compliance management systems
Environmental sustainability
Net zero
Sustainable design in our products
Combating Falsified Medicines program
Select partnerships
References
We believe ESG creates long-term value for our shareholders

1. Driving top line - excellence in launches
2. Driving bottom line - operational excellence
3. Pipeline - delivering on innovation

Source: Aswath Damodaran: Value Enhancements: Back to Basics, Vontobel Equity Research
Our ESG priorities are integrated into business operations

Innovation, patient health and safety

- New products to meet sustainability design principles
- Diversity in clinical trials
- Adaptive projects that meet unmet healthcare needs
- Addressing counterfeit medicines

Access to healthcare, ethical business practices

- Focus on Access Principles
- 100% of launches with global access strategy
- Global Health Flagship programs

Good governance, human capital

- ESG targets for ECN and strategic priority at Board level
- Diversity & Inclusion initiatives
- Sustainability-Linked Bond
- Code of Ethics

Environmental sustainability

- Third Party Risk Management
- Supply Chain and Human Rights

CTS – Customer & Technology Solutions
NTO – Novartis Technical Operations
GDD – Global Drug Development
NIBR – Novartis Institutes for BioMedical Research

References
Multi-year approach to enhance our reporting

2020 reports

Enhance ESG disclosure

Novartis in Society ESG Report

Annual Review

2021 reports

Consolidate, simplify & digitize

Consolidated business/ESG report

2022 reports or later

Towards a fully integrated report

Integrated Report

Enhance ESG disclosure

ESG Index published¹
SASB-aligned²
Novartis in Society report with new ESG targets
1st TCFD disclosure

Consolidate, simplify & digitize

Further enhance ESG Index
Consolidated business & ESG report, aligned with 2021 Materiality assessment and influenced by IIRC value creation approach.
Aligned with GRI, TCFD³, SASB.
Online search and tagging.
SASB XBRL filing
SFD and SDG alignment

Towards a fully integrated report

Continue to adapt to the external reporting landscape, with the ambition to publish a fully integrated report as our Swiss regulatory filing

disclosure expected 2023 (reporting year 2022)
3. TCFD quantitative

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References
2021 Materiality Analysis confirms Patient health, access, innovation, ethics, human capital most important priorities

**Results inform:**

- Annual Strategy Review
- Enterprise Risk Management
- Country strategy via local materiality analyses (incl. US)
- Long-term strategy via scenario analyses

**Methodology**

- External and internal perspective
- Materiality analysis and impact measurement
- Access principles
- Global health and innovation
- Health systems strengthening
- Human capital
- Culture
- Diversity and inclusion
- Responsible supply chain incl. human rights

**External View**

- Innovation
- Access to Healthcare
- Patient Health and Safety
- Human Capital
- Good Governance
- Sustainable Financial Performance

**Internal View**

- Ethical Business Practices
- Environmental Sustainability

**Notes:**

- Ranking based on quantitative analysis (incl. internal + external stakeholders, weighted 50/50%); participants include associates (12k+ responses), investors, providers/HCPs/patient organizations, government/regulatory stakeholders, partners (incl. suppliers & customers), NGOs/NPOs/charitable organizations (500+ responses); survey period February 2021 – June 2021; Ambition level derived from qualitative insights (i.e. ~70 interviews & free-text answers from survey).

---

**Appendix**

- ESG integration and reporting
- Materiality analysis and impact measurement
- Methodology
- Results inform:
  - Annual Strategy Review
  - Enterprise Risk Management
  - Country strategy via local materiality analyses (incl. US)
  - Long-term strategy via scenario analyses

---

**References**
Novartis brings together thought-leaders from academia, business, investors, institutions to make progress on impact measurement.

<table>
<thead>
<tr>
<th>Date</th>
<th>ESG Materiality Webinar Series</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2020</td>
<td>Reimagine Access</td>
<td>526</td>
</tr>
<tr>
<td>May 2020</td>
<td>Sickle cell disease</td>
<td>270</td>
</tr>
<tr>
<td>Jun 2020</td>
<td>Embracing double materiality: responding to COVID</td>
<td>225</td>
</tr>
<tr>
<td>July 2020</td>
<td>Wealth and Health</td>
<td>301</td>
</tr>
<tr>
<td>Oct 2020</td>
<td>Measuring, evaluating social outcomes of access</td>
<td>326</td>
</tr>
<tr>
<td>Dec 2020</td>
<td>Co-Creating Impact Summit</td>
<td>1,107</td>
</tr>
<tr>
<td>Feb 2021</td>
<td>Dialogue matters – spur positive impact</td>
<td>593</td>
</tr>
<tr>
<td>Jun 2021</td>
<td>Materiality, impact valuation: enablers of purpose</td>
<td>452</td>
</tr>
</tbody>
</table>

Novartis 4th Co-creating Impact Summit
December 2, 2021, registration [link]

**Speakers**

John Elkington
Chief Pollinator at Volans

Prof. Colin Mayer
Peter Moores Professor of Management Studies, Said Business School, University of Oxford

Sir Ronald Cohen
Chairman, Global Steering Group for Impact Investment

Right Hon Nick Hurd
Chair of G7 Impact Taskforce

Naina Batra
CEO and Chairperson AVPN

Dr. Eliane Ubalijoro
Executive Director of Sustainability in the Digital Age and the Future Earth Montreal Hub

Amra Balic
EMEA Head of BlackRock Investment Stewardship

Gabriela Ramos
Assistant Director-General for Social and Human Sciences, UNESCO

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ESG investor event | September 30, 2021
Delivered 1bn courses of antimalarial treatment by 2021 and we continue to expand our efforts

Patient reach for in-market portfolio is increased by

1. Tender excellence program
2. Strengthen and expand presence in SSA
3. New channel focusing on non-profit and faith-based organizations
4. Capability building through Pharmacy Academy

Pipeline co-funded via MMV, Wellcome and European & Developing Countries Clinical Trials Partnership

- Address threat of resistance (novel mechanisms) - Ganaplace/Lumefantrine; Ganaplace/INE963
- Optimization of existing treatment - New ratio of Artemether / Lumefantrine for infants < 5kg (currently no approved treatment exists)
- Novel IV treatment for severe malaria - Cipargamin IV

Address threat of resistance (novel mechanisms)

- Novel IV treatment for severe malaria
- Tender excellence program
- Strengthen and expand presence in SSA
- New channel focusing on non-profit and faith-based organizations
- Capability building through Pharmacy Academy
Tackling Sickle Cell Disease: Innovating and building ecosystems to save lives

Working with local partners and the government to develop/strengthen:

Treatment guidelines
Newborn screening
Health center network
Research environment

Central lab testing
Access to basic medications (e.g., hydroxyurea, penicillin, NSAIDs)

EXPANDING public-private partnerships across Sub-Saharan Africa, aiming 10 countries by 2022.

**Ghana**

Hydroxyurea treatment costs would be covered by National Health Insurance System

A dispersible and **child-friendly formulation approved**

Crizanlizumab application filed with Ghana FDA, anticipated launch in Q2 2022

Patient enrollment completed for **STAND** clinical trial in Ghana

**23 SCD treatment centers** have been trained and enrolled in the program

>30k babies registered on newborn screening app

**Other countries**

Commenced SCD program in **Uganda**

MOUs signed with **Kenya** and **Tanzania** in 2020

Submitted MOUs to the MOH of **Senegal**, **Zambia** and **Angola** for partnership

Expanding public-private partnerships across Sub-Saharan Africa, aiming 10 countries by 2022.

**MOUs signed:**
Targeted R&D and data & digital technologies are part of our solution to make healthcare more accessible

R&D for underserved population

5-year commitment: Invest USD 100m into R&D for Malaria

1st multinational, prospective, randomized study (Entresto®) in Chagas

Lucentis® EU approval for preterm infants with retinopathy of prematurity, 1st and only licensed pharmacological treatment for this indication1

Leveraging of data, digital & AI

Innovative approaches to enable access for our patients

HP Enterprise collaboration to accelerate the use of digital technologies in Global Health (1st use case: disease surveillance solution for dengue)

Founding of Novartis AI innovation lab with Microsoft as strategic partner: starting with personalized therapies for macular degeneration, cell & gene therapy, drug design

Novartis Foundation, Microsoft and partners launching AI4BetterHearts, 1st global collaboration for improving CV population health using AI, advanced analytics

1. Lucentis® (0.2 mg) is indicated in preterm infants for the treatment of ROP with zone I (stage 1+, 2+, 3 or 3+), zone II (stage 3+) or AP-ROP (aggressive posterior ROP) disease

ESG integration and reporting

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References

1. Adaptive development: Modification of existing medicine to improve therapeutic efficacy, safety, access – focusing on vulnerable populations
Managed Access Programs at Novartis (MAPs)¹

Addressing unmet needs by providing access to locally unapproved innovative treatments for patients who have serious or life-threatening diseases or conditions, for which there are no alternative treatment options available and where enrolment into a clinical trial is not feasible

Reimagining MAPs at Novartis

MAPs granted to

>30,000 patients

globally since January 2018

Collaborating with the IBAC²

on selected ethical challenges in MAPs since 2017

A snapshot of MAPs in 2020³

10,670 MAP requests received & reviewed

7,200 Oncology

3,470 Pharma

94% approved

>18,000 re-supply requests granted to patients benefiting from treatment

Looking forward, ongoing MAPs include:

1. Local terminologies such as Compassionate Use Programs (CUPs), Early/Expanded Access Programs (EAPs), Named Patient Supply (NPS), etc. are collectively described under the umbrella term MAPs at Novartis.
2. The Independent Bioethics Advisory Committee (IBAC) comprises bioethicists, clinicians, healthcare practitioners, patient advocates and other domain knowledge experts appropriate to the problem at hand.
3. Based on Novartis data analyzed as at 12th January 2021. See our page on Novartis.com for more details.
Our Novartis Access and Healthy Family programs reached ~11m people in 2020

No. of people reached¹ (incl. patients)

<table>
<thead>
<tr>
<th>Year</th>
<th>Healthy Family</th>
<th>Novartis Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>2020²</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

| 1. People reached for Healthy Family and Novartis Access | 2. Reduction in social activities due to COVID-19, leading to reduced people reach |

Novel sustainable business models – generated net sales of USD 44m over 4 years to 2020

1. People reached for Healthy Family and Novartis Access
2. Reduction in social activities due to COVID-19, leading to reduced people reach
Health systems strengthening through our Novartis Foundation (NF)
Influencing Population Health Policies and Actions to deliver on high-impact initiatives

Catalyzing population health policies and actions

Building partnerships to move the needle on population health issues

Convening and engaging
Co-create a population health approach for CVD & breast cancer with select cities

Influence AI in Health Policy through Broadband Commission Working Group & AI4HealthyCities Dialogue

Basel STELLA partnership for DHIS2

Accelerating Health and Care Innovation

Catalyzing innovations
Global data collaborative on cardiovascular population health (AI4BetterHearts)

Support HealthTech solutions that can transform health systems to become more proactive, predictive and preventative

Underpinned by the power of data, digital and AI to reimagine health and care for low-income populations and transform health systems from being reactive to proactive, predictive and preventative

Application of the NF urban population health approach, CARDIO, to increase health equity across the globe
Urban Population Health Toolkit | Novartis Foundation
Support countries to self-assess and advance in their maturity to deploy AI solutions in health
https://AI.novartisfoundation.org/
Health systems strengthening solutions address barriers that prevent patients from accessing healthcare needs

Addressing local needs, focusing on barriers along the patient journey where we have expertise and can have the greatest impact

Access to and effective use of data and digital solutions

Example: Partnership with MedShr platform providing interactive case-based learning and discussion groups via app

<table>
<thead>
<tr>
<th>Heart Failure Education in SSA</th>
<th>COVID-19 Education Across Africa and Middle East</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational cases</td>
<td>Educational cases</td>
</tr>
<tr>
<td>6</td>
<td>98</td>
</tr>
<tr>
<td>Discussion Group for peer-to-peer learning</td>
<td>Community building</td>
</tr>
<tr>
<td></td>
<td>90,000 in group</td>
</tr>
<tr>
<td>HCPs reached</td>
<td>HCPs reached</td>
</tr>
<tr>
<td>~120,000</td>
<td>&gt;366,000</td>
</tr>
</tbody>
</table>

Health systems strengthening solutions address barriers that prevent patients from accessing healthcare needs. Addressing local needs, focusing on barriers along the patient journey where we have expertise and can have the greatest impact.

Access to and effective use of data and digital solutions:

Example: Partnership with MedShr platform providing interactive case-based learning and discussion groups via app.

**Heart Failure Education in SSA**

- Educational cases: 6
- Discussion Group for peer-to-peer learning
- HCPs reached: ~120,000

**COVID-19 Education Across Africa and Middle East**

- Educational cases: 98
- Community building: 90,000 in group
- HCPs reached: >366,000
Our progress on culture transformation is monitored through data driven insights

**Evidence insights**

CEBMa

*Helping people in organizations make better decisions*

Key factors predicting performance among knowledge workers:

- **Group goals:** Inspired, Curious, Unbossed
- **Perceived support for innovation:** Inspired, Curious, Unbossed
- **Perceived supervisory support:** Inspired, Curious, Unbossed

**Effect size:**

- 0.2
- 0.4
- 0.6
- 0.8
- 1

Study commissioned to CEBM\(^1\) showed that knowledge workers’ performance is correlated with inspired, curious and empowering behaviors.

**External data**

**Innovation (percentile)**

- Novartis: 95
- Company A: 93
- Company B: 93
- Company C: 92
- Company D: 89

**Performance (percentile)**

- Novartis: 84
- Company A: 97
- Company B: 96
- Company C: 62
- Company D: 62

External analysis of Culture\(^2\) with 2m+ data points ran by MIT: #1 on Innovation and #3 on Performance (within Pharma).

**Internal data**

- Culture Adoption Index
- *Culture* measures
  - OurVoice Scores
  - Team Perspectives
  - Learning Hours
  - Spark Recognitions

- Culture Performance Tracker
  - Depicts statistical relationship between culture and a set of performance indicators

- Performance KPIs
  - Net Sales
  - Market Share
  - Operating Income
  - Voluntary Turnover

Data enables us to bring focus on specific culture levers to drive superior business performance.

---

We disclose on our pay gap and pay equity efforts

Pay gap¹

Company’s proportion of women...

...in the top 10% compensated employees 43%

...in the top pay quartile 48%

...in the upper-middle pay quartile 54%

...in the lower-middle pay quartile 53%

...in the lower pay quartile 46%

Pay equity

- Pay equity is a fundamental principle of our employment policies and is reflected in our commitment to treating all employees fairly and respectfully, as outlined in our Code of Ethics

- Equal pay audits form part of our EPIC pledge commitments and have already been undertaken in multiple countries (including US and Switzerland), covering 75% of the population expected by end 2021

- Pay equity assessments to be undertaken in all markets by 2023

¹ Global data, as of Dec 31, 2020
We remain committed to developing responsible and sustainable global supply chains

Environment

Partnering with top 100 suppliers globally (responsible for >50% of scope 3 emissions)

1st Novartis Green Supplier Summit

Implementing blockchain for traceability and product updates through ePI. This will minimize printed paper leaflets and allow anti-counterfeit checks

Social

Launching Global Novartis Responsible Sourcing Framework with goals for 2025 and 2030, to include supplier D&I in line with the United Nations SDGs 5 and 10

Social

D&I principles upheld in all TPRM, procurement and supply chain practices

2021

Social

Strengthening US Supplier Diversity programs with focus on small and diverse suppliers together with business associations

2022

Environment

Rolling out Novartis Green Expectations to the top 1000 suppliers globally (responsible for >90% of scope 3 emissions) providing support with their environmental sustainability progress

2023

Governance

ESG metrics to be considered among key criteria for supplier selection, awarding and classification

To manage risks in our supply chain, we have developed a robust Third Party Risk Management Framework

No engagement before completed risk assessment

One of our key risk areas is our interactions with third parties. Novartis works with third parties who conduct business in a manner that is consistent with our values and standards, as defined in the Novartis Third Party Code.

Risk areas in scope

- Anti-bribery
- Animal Welfare
- Data Privacy
- Financial Risk
- Health, Safety & Environment
- Labor Rights
- Information Security

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- Financial Risk
- Health, Safety & Environment
- Labor Rights
- Information Security
We are fully committed to implementing UN Guiding Principles on Business and Human Rights (UNGPs)

Our aim | Effectively manage human rights across Novartis and inspire others to do the same

Governance

Human Rights moved to Ethics, Risk and Compliance function in 2021, expanding the scope beyond TPRM and including other areas such as clinical trials, access to medicine

Updated strategy to sharpen our focus on 3 pillars: Due diligence, empowerment, and external Engagement

Tracking progress

Tracking performance metrics across our 3 pillars: e.g. no. of due diligence projects completed, remediation actions, internal trainings, external engagements, collective action projects

We defined our 12 “salient” human rights issues, based on 3 years of due diligence, country visits, and external engagement

Third Parties

Human Rights now fully integrated into TPRM, support has shifted to highest-risk remediation engagements

2 pilot projects underway: guidance to high risk third parties on integrating human rights into management systems and tracking progress

EXAMPLE

Successfully engaged producers of carnauba wax through collective action project with PSCI; established internal working group to continue assessing high-risk materials and updating our procurement standards with human rights

TPRM – Third Party Risk Management Framework  PSCI – Pharmaceutical Supply Chain Initiative
Our program continuously evolves to meet the organization’s needs and risk profile

**Ethics**
Build a sustainable foundation

- Code of Ethics & Decision Explorer
- Ethics Conversation Toolkit
- Ethical, Responsible Use of AI, Position Paper
- Global Ethics Baseline Survey
- Hiring for Integrity
- Planned: Human Rights Commitment
- Planned: Ethical & Responsible Use of Data, Position Paper

**Risk**
Develop enterprise assurance standards

- Enterprise Risk Management Framework
- Third Party Risk Management (TPRM) Framework
- Enterprise Policy and Control Framework
- Updated TPRM Guideline & Third Party Code
- Enterprise Monitoring Coordination Team
- Planned - Enhancements to TPRM

**Compliance**
- Centralized Monitoring & Remediation Team
- Updated: Conflict of Interest Guideline & Disclosure Tool
- FMV Methodology for Patient Engagement
- Compliance Management System Evaluation
- Planned: Review of Non-Retaliation Guideline
- Planned - Updated P3 Policy & Operating Model
- Planned: Compliance Management System Monitoring Program
We launched a first-in-class position paper on ‘Ethical and Responsible use of Artificial Intelligence’

8 principles, guiding ethical and responsible use of AI

Ensures a human-centered approach in using AI to reimagine medicine.

Living up to our commitments in the Code of Ethics, our ethical and responsible use of Artificial Intelligence position papers was developed collaboratively across Novartis and reviewed by external industry advisors. It practically sets guardrails and principles on what we should and shouldn’t do when it comes to the use of Artificial Intelligence.

One of the 1st companies to make such a bold commitment, recognized internally and externally.
To establish an ethical baseline, we launched our annual Global Ethics Survey

Survey design
11 recognised psychological constructs, 4 outcome variables measured through 51 questions
Considered decades of research: 10 existing / past surveys, 30 constructs from 100+ research articles, academia insights
Global & inclusive: in 15 languages representing ~97% of Novartis population, all associates could participate
38,437 complete responses, plus 19,494 partial responses

Insights from initial results
Our associates think they are clear on what’s expected of them
Associates’ ability to recognize ethical dimensions is highly varied
Strongest aspect of our ethical environment: sense of control
To develop an ethics-based culture, we introduced an approach that focuses on supporting our associates in decision-making.

**Approach**

Be ethical when thinking about it ‘changing the mind’

Be intuitively ethical ‘changing the environment’

**Objectives**

1. Reinforce clarity of expectation of what it means to conduct oneself in Novartis
2. Put moral and ethical implications at the center of daily decision making
3. Send a strong ethical signal & create a lasting momentum
4. Attract and retain associates with uncompromising integrity
5. Turn every associate into ‘ethical leaders’ in their own rights
6. Drive ethical and sustainable performance

**Means**

- **Our Code of Ethics, Ethical Principles, and Compliance Policies**
- **Our ethical decision-making framework Decision Explorer**
- **Ethics Week, global eTraining, and associated events**
- **Hiring for Integrity strategy and pilot, ethical talent development**
- **Ethical Conversation Toolkit, to increase speaking-up**
- **Reimagining Performance Management, resulting in EVOLVE**
Ethics is embedded within our People, Processes and Performance Incentives

Recruitment processes

‘Hiring for Integrity’ puts integrity at the core of our recruitment process so that we hire people with uncompromising integrity, and shape candidates’ perception of what Novartis stand for.

“\textit{I never want Novartis to achieve our financial performance or objectives because we compromised on our ethical standards or our values.}”

Vas Narasimhan, CEO

Performance incentives

CEO, executive and associate incentives

All Novartis associates are subject to a performance management process based on quantitative and qualitative criteria, including our Values & Behaviors.

Field Force incentives

Since 2016, variable incentives of the field force has been reduced to a maximum of 35% of total compensation.

For our sales force, 20% of target variable pay is based on demonstration of our Values & Behaviors.
Our Enterprise Risk Management cycle runs until September, resulting in the Novartis Risk Compass

The methodology covers **21 risk areas** and is initiated by a series of Risk Workshops covering all Operational Units, Corporate Functions, and selected Countries. Each risk identified is assigned a risk owner, risk treatment, and remediation plan. This is captured in our Enterprise Risk Management Tool and monitored throughout the year. Each September, all the respective units come together to discuss key risks and align on the key risks that form the Novartis Risk Compass. These key risks, shape the risk agenda of the Executive Committee and Risk Committee of the Board.

**Strategic Risks**
Risks that are most consequential to Novartis ability to execute its strategy or achieve its business objectives.
1. Key products and commercial priorities
2. Pricing, reimbursement and access
3. Research and development

**Emerging Risks**
Identified risks that require close monitoring, which may evolve to a significant Operational or Strategic Risk.
1. Geopolitical and socio-economic threats
2. New ways of working
3. Global ERP implementation

**Operational Risks**
Risks resulting from inadequate or failed internal processes and / or systems, employee errors or from external events.
1. Cybersecurity and IT systems
2. Third party management
3. Manufacturing and product quality

**Awareness Topics**
Trending topics that are not accounted by Novartis risk management yet but have the potential to become a new risk.
1. Climate change
2. Changes in disease patterns, antimicrobial resistance and pandemics
3. Deterioration of Human Rights protection
We have a well-designed Compliance Management System that detects and prevents systemic misconduct

Ethics and Integrity are at the heart of our organization

Our updated framework helps cover all elements of an effective corporate compliance program and is fully aligned with recognized international standards and best practices.

Our program continuously improves over time and provides us with the right level of oversight across each of the core elements.

Risk areas in scope

<table>
<thead>
<tr>
<th>Ethics</th>
<th>Bribery &amp; corruption</th>
<th>Third party bribery &amp; corruption</th>
<th>Professional practices</th>
<th>Conflicts of interest</th>
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Our ‘SpeakUp Office’ provides a safe place for associates to raise concerns

<table>
<thead>
<tr>
<th>REPORT</th>
<th>REVIEW</th>
<th>INVESTIGATE</th>
<th>DECISION</th>
<th>UPDATE</th>
<th>ACTION</th>
<th>CLOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report concern using one of the SpeakUp platforms</td>
<td>Concern reviewed to decide next steps</td>
<td>Local or global function investigates</td>
<td>Business decides on appropriate action</td>
<td>Employee will be updated on the case</td>
<td>If required, actions will be put into practice</td>
<td>SpeakUp case closed</td>
</tr>
</tbody>
</table>

ESG integration and reporting
Materiality analysis and impact measurement
Access principles
Global health and innovation
Health systems strengthening
Human capital
Culture
Diversity and inclusion
Responsible supply chain incl. human rights
Ethics, risk and compliance
Embedding ethics
Risk and compliance management systems
Environmental sustainability
Net zero
Sustainable design in our products
Combating Falsified Medicines program
Select partnerships
References
Committed to carbon neutrality based on scope 1 – 3 targets, with clear plans, milestones and metrics

Building momentum with urgency to act

2025 milestones
- 100% renewable energy across operations
- Switch at least 40% of vehicle fleet to electric power
- 100% of supplier contracts to include environmental sustainability criteria

Catalyzing change

2030 goals
- Carbon neutrality in scope 1, 2, 3
- Commitment to SBTi target
- By 2030, we will reduce scope 1, 2, 3 emissions by at least 35% without the use of carbon removal offsets

Delivering net zero

2040 vision
- By 2040, we will reduce scope 1, 2, 3 by at least 90% and balance any remaining emissions with credible carbon removal offsets
- Advanced technology

ESG investor event | September 30, 2021
Our journey to reduce emissions is underway, with global initiatives across our operations

How we address Scope 1 and 2
2020 million tCO₂e

Scope 3 GHG emissions 2020

Our methodology for calculating scope 3 emissions has been adjusted since 2016, with greater visibility and transparency in our baseline.

Scope 3 categories

1. Others include in Thousand tCO₂e, 22 for Business Travel, 99 for Employee Commute, 170 for Use of Sold Products, 28 for Waste Generated in Operations and 30 for Downstream Transportation and Distribution. 2. Others, in Thousand tCO₂e, include categories such as Clinical services, Meetings and Events, IT & Digital, Laboratory Equipment, Contingent Labor, Facilities Management, among others. *Methodology used to calculate Scope 3 emissions in 2016 was aligned with Science Based Targets validation criteria which required targets to cover at least 2/3 of total mandatory scope 3 emissions as defined in Tae 5.4 of the GHG Protocol Scope 3 standard. In 2020, Novartis decided to further improve completeness, transparency and accuracy to cover more than 90% of overall scope 3 emissions.
As part of our sustainability journey, we are implementing ‘circularity’ in design of our products

Circular Economy Principles

1. Raw Material
   Examples of environmental sustainability optimization potentials
   - Use non-hazardous / more sustainable material alternatives

2. Product Design

3. Production
   - Reduce PMI (Process Mass Intensity), lean production process

4. Distribution
   - Reduce number of shipments and distance. Green Logistics.

5. Use & Re-use
   - Recovery & recycling of solvents and precious metal catalysts

6. Collection
   - Dry Powder Inhaler device take-back scheme: Pilot started in April 2021 in CH.

7. Recycling
   - Consider recyclability of devices & packaging at design phase itself

Embed “Sustainability by Design” thinking across Drug Substance, Drug Product, Device, and Packaging development

Scale-up current pilot projects/compounds over the coming years to more systematically integrate environmental sustainability aspects into our existing R&D & manufacturing processes.
Electronic product information (ePI) implementation reduces waste

Process innovation to reduce waste

Implementation of blockchain for traceability and product updates
Novartis is part of the PharmaLedger initiative – a consortium of 29 health industry partners pioneering a leading solution for secured digital product information update and validation. Implementation of ePI is the first step, which will allow access to the up-to-date product safety & regulatory information & specific product status (batch number, expiry, recall etc.) through a QR code, and eliminate/minimize printed leaflets. Further, this initiative will also allow anti-counterfeit check, adverse event reporting, finished goods traceability, etc.

E-leaflets and labeling in production at Sasayama and Singapore
The physical paper leaflets for Novartis products manufactured at our Sasayama plant have been replaced with approved product information on the local Novartis websites. This will save 120 tons of paper per year with elimination of 20 million leaflets, in turn saving USD 3m in printing costs.

Implementation of e-labeling for Novartis products available in Singapore has saved efforts of 700 hours/year for QA, supply chain and regulatory teams and, 12 tons CO$_2$e in 2021 from printing elimination.

18,500+
Football fields can be covered by printed leaflets

45 kt CO2e
Potential reduction in carbon footprint

USD 64m
Saved cost of printed leaflets

Shortcomings of paper-based labelling and leaflets
- Expensive & time-consuming process – to update/ correct product safety and regulatory information for existing inventory
- Not reader friendly – printed font size cannot be adjusted for each reader

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We have reduced plastic usage by optimizing blister size for multiple products

Improve material efficiency

Blister size reduction using Global Packaging Catalog

After transferring packaging for the GalvusMet (Euacreas) product family (packaged in PVC blisters) to NTO Solids Lendava, the team explored the possibility of reducing the use of plastics in blisters and proposed smaller blisters. On the basis of Global Packaging Catalog, they chose the most suitable standard blister size of 60x98 mm versus 64x104 mm previously used.

GalvusMet blister size reduction

NTO Solids Lendava has reduced the blister size by 12% and the plastic usage by 0.6g per blister, without compromising on the quality of the products that the patients receive in a reliable way.

Sustainability in packaging

12%
Size (area) reduction with the blister optimization

0.6g
Blister grammage reduction, upon optimization

27
Pallets of plastic avoided per year (full truckload)

Blister dimension optimization has economic benefits

- Reduction of material used for blister production – plastic usage footprint and waste reduction
- Reduction in grammage i.e. unit product weight reduction – logistics footprint reduction
We have successfully prototyped fully plastic-free packaging

Switch to eco-friendly materials

Promising plastic-free packaging prototype
NTO has worked on a secondary packaging solution for a pre-filled syringe (PFS), that consists entirely of cardboard – instead of PVC or biodegradable plastic. The drug device is fitted into a meticulously folded carton, which allows the product to be safely transported. This in turn reduces the tertiary packaging and the weight of the package itself – thus 2x packages can now be accommodated on shipping pallet.

Carton box prototype for PFS
NTO Packaging team's prototype has reduced the package weight by 28% and the PET usage by 17g per package.

Sustainability in packaging

3
Suppliers that can be eliminated from original

2x
Number of packs can be transported on pallet

50%+
Carbon footprint reduction per year

Estimate assuming the prototype were implemented, carbon footprint reduction compared to the original PFS packaging.

Need for using eco-friendly materials alternatives

- Current PVC does not biodegrade easily and can take up to thousand years to decompose
- PVC and other high carbon footprint materials need to be substituted with eco-friendly alternatives ideally plastic free
Advancing our Combating Falsified Medicines program

1. **Strengthen Supply Chain Security**
   - Launched a global supply chain security risk assessment: Core focus on high risk countries (in the pandemic context and its pressure on the pharma supply chain)

2. **Advance Digital Empowerment**
   - Fast & mobile enabled solutions: packaging verification (MOVE), product authentication (Authentifield by Novartis)
   - Leading the IMI® Blockchain use-case: Supply chain security and patients’ empowerment

3. **Leverage Collective Action**
   - Timely reporting of confirmed falsified medicines incidents to the WHO within the prescribed 10 days.
   - Reporting all confirmed incidents using WHO’s new online portal
   - Company effort recognized as one of 8 Novartis best practices by the 2021 ATMI®

**Strong governance**
- Falsified medicines listed as a Strategic Risks in the Novartis Risk Compass (≥ 90% of falsified medicines forensically tested showed a level 3 patient safety impact (i.e. serious harm / death)
- Enterprise Risk Management Controls related to detection & reporting
- Cross functional collaboration with 7 regional working groups
- Progress discussed at Executive Committee (Trust & Reputation Committee)

---

1. Risk assessment: facilities & warehouse distribution, country risk assessment (top 26), illegal diversion, primary & secondary transporters, and access deep dive
2. Endorsed by the ECN TRC, FGC, IT DRC
3. Innovative Medicines Initiative
4. As of Q3 2021, World Health Organization incident reporting portal
5. Access to Medicines Index indicator PQ2: Reporting of falsified and substandard medicines
Strategic partnerships are important to our efforts to lead on ESG issues and develop innovative solutions

Access & Global Health
Member of Global Chagas Disease Coalition
Member of Swiss Alliance against Neglected Tropical Diseases
Co-founding partner of Global Partnership for Zero Leprosy (GPZL)
Member of Business Refugee Action Network
Signatory to Guiding Principles on Access to Healthcare (GPAH)

Diversity & Inclusion
Signatory to UNGC
Member of UN Equal Pay International Coalition (EPIC)
Signatory to Women’s Empowerment Principles
Signatory to WBC for Sustainable Development’s CEO guide to Human Rights
Support for UN’s workplace standards for LGBT

Environmental Sustainability
Supporter of TCFD
Joined SBTi initiative – Business Ambition for 1.5C
Signatory to UN Global Compact CEO Water Mandate
Member of RE100 (100% renewable energy)
Member of EV100 (electric vehicles by 2030)
Member of Ellen MacArthur Foundation (circular economy)
Member of Sustainability 30 (S30)

Impact Valuation
Member of Impact Valuation Roundtable
Founding Member of Value Balancing Alliance

Anti-microbial Resistance
Signatory to Davos Declaration on combating AMR
Member of AMR Industry Alliance
Member of the Responsible Antibiotics Manufacturing Platform
Member of AMR Action Fund

1. As a UNGC signatory, Novartis supports the Universal Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, the UN Convention Against Corruption, the OECD guidelines for Multinational Enterprises, the OECD Convention on Combating Bribery of Foreign Public Officials and the UN Guiding Principles on Business and Human Rights.
References

Sector leading performance across various ESG ratings
1. 2021/2020 scores
2. Updated April 2021
3. 2020/2019 scores
4. Published every 2nd year. Updated September 25, 2020
5. Published every 2nd year. Result shown shows 2020/2018 scores
6. As Sep 22, 2021. D&I based on Top 100 Most Diverse and Inclusive Companies published
7. 2020 Score, Novartis has been a member of the DJSI World and DJSI Europe since 2002
8. 0-10 scale, 0 being most severe controversy
9. Leadership as defined by rating agencies
10. Pharmaceuticals subindustry group: traditional Pharma, excl. Biotech
11. CDP considers companies with A and A- in Leadership position. Companies across industries in A list. 277 for Climate and 106 for Water
12. Based on industry adjusted score of MSCI >25bn Pharmaceuticals group

Highest unmet needs in healthcare
1. Access to Medicine Foundation
3. COVID Tracking Project and the Boston University Center for Antiracist Research. https://covidtracking.com/race
6. https://www.who.int/news-room/fact-sheets/detail/malaria
References

Access Principles in practice: Emerging Market Brands
LMICs represents 152 countries defined as low-income economies and lower-middle-income economies as per the World Bank definition as well as selected high income and upper-middle-income economies with high income disparity.

Strategic Innovative Therapies (SITs) refers to a selection of key innovative medicines made available by our Innovative Medicines division that are approved as SITs by a competent member of the Executive Committee, based on factors such as patient impact, commercial viability, innovative standing and other factors. EMBs reflect a commercial access strategy used to drive affordability, expand patient reach in LMICs. SITs may be marketed under different EMBs in LMICs

1. Launched in India, 1 month ahead of first European country launch

Address unresolved global health challenges

1. https://www.who.int/news-room/detail/malaria
4. https://www.who.int/news-room/detail/leprosy

Therapeutics to prepare for future pandemics

1. Designed Ankyrin Repeat Protein
2. EMPATHY trial: Outpatient treatment (high risk/care homes); ACTIV-3 trial: Hospitalized patients (mild/moderate)
3. Preclinical data shows capable of binding to all known variants of concern, neutralization potencies against the circulating variants B.1.1.7 (UK variant), B.1.351 (South African variant), P.1 (Brazilian variant), B.1.459 (South Californian variant), and B.1.526 (New York variant). Strong evidence that ensovibep also potently neutralizes the two Indian variants B.1.617 and B.1.618.