

# Transforming and streamlining the Report Analysis Plan - a journey in capability build and changing responsibilities

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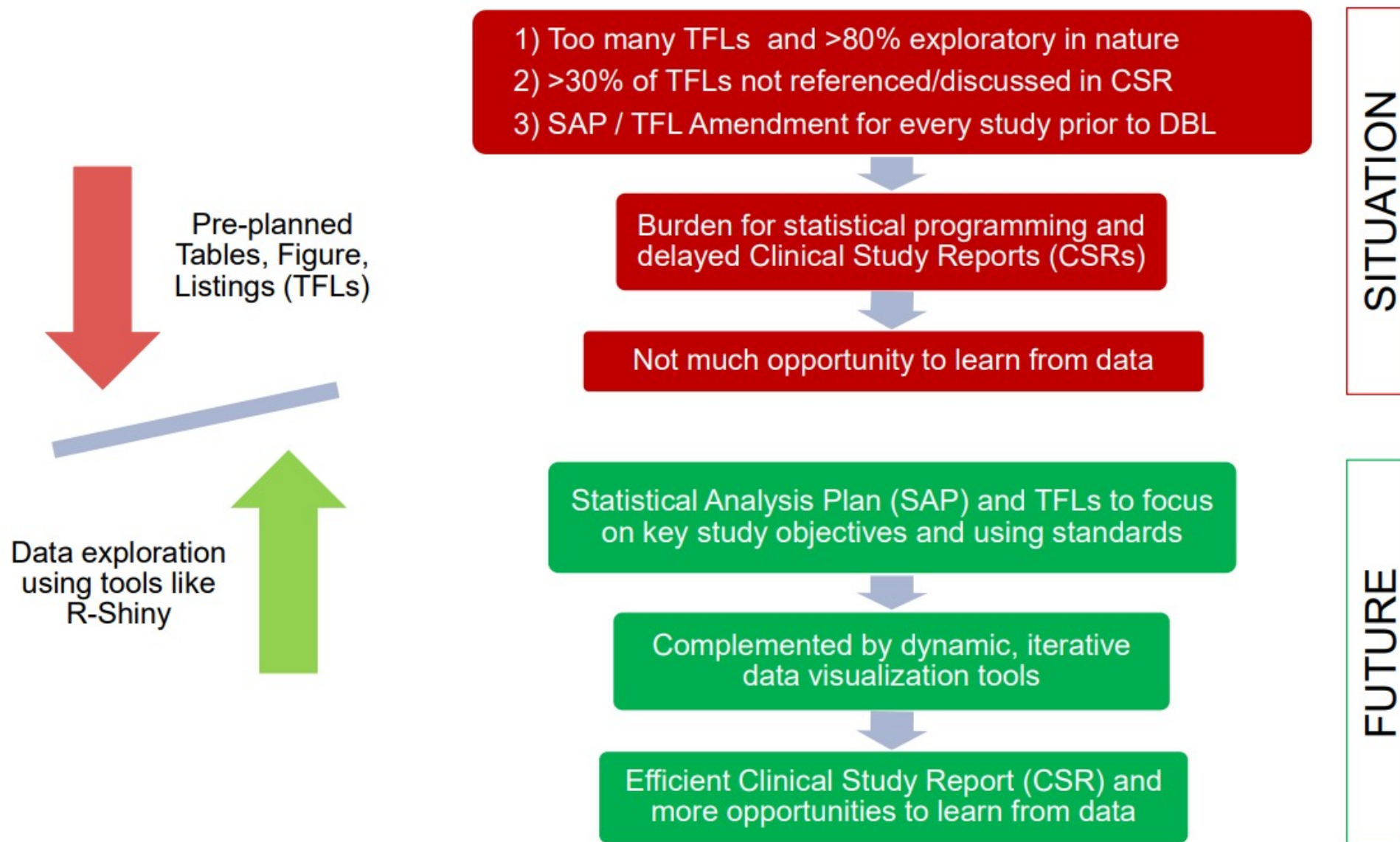
A core aspect for successful CSR creation is the provision of a good quality and fit for purpose Report Analysis Plan. In Novartis this consists of the Statistical Analysis Plan and the Tables, Figures and Listing specification document.

The authors will discuss several major changes in capability and responsibilities that have been implemented in the Novartis Global Drug Development Organisation to streamline study analysis & reporting and advance explorations. Key aspects include approval of SAP and authorship of TFL shells by the Statistical programmers (SP) and Medical writers (MW) – translating the SAP into their programs and CSR creation plans by making best use of existing standards.

With streamlined CSRs, the statisticians are now responsible for the creation of exploratory analyses outside the CSRs. The changes have been implemented in July 2020 and the paper will cover the challenges, transformation and effect on the business.



# How did it all start mid 2018



# SMART initiative was born - 2019

**SAP LEANing**  
(incl. awareness sessions)

**Process Recalibration**  
(e.g. who should develop TFL shells)

## Streamlined Analysis Reporting and advanced exploratIon (SMART)

- Move to a state of lean CSRs focused on addressing key clinical trial questions, complemented by real-time data visualization and exploration
- Transforming how we plan and develop CSRs with enhanced capabilities and efficiently assigned responsibilities

**Exploration Culture**  
(incl. trainings)

**Advanced Visual Analytics**  
(R Shiny tools)

# What did the team do first?

Give some guidance to help the LEANing efforts – as only then we would have statistical programming resources to take on new responsibilities:

## 1) **Guidance on CSR listings**

Focus on ICH-required listings in Section 14 rather than data dumps

## 2) **Guidance on Close-out CSRs**

Streamlining final CSR when a primary CSR had been done before

## 3) **Guidance for Exploratory Analysis**

What is in CSR vs done separately. How to plan and document.

## 4) **Decision to create Post-text outputs in Word-cell based format**

Avoiding duplication and facilitate work of medical writer

Separately, we had an initiative to collate TFLs and **start building global TFL library** across therapeutic areas and development phases



# Change in RAP process in 2020

## SAP

Author: Trial Statistician (TS)  
Approved: Medical Lead, Lead Statistician

Usually not reviewed by Medical writer (MW) and Trial Programmer (TP)

## TFLs

Author: Trial Statistician (TS)  
Approved: Medical Lead, Lead Statistician, Lead Programmer, Medical Writer

A WORD document with all shells created by the TS.

PAST

## SAP

Author: Trial Statistician (TS)  
Approved: Medical Lead, Lead Statistician, **Trial Programmer, Medical Writer**

Reviewed and challenged by MW and TP having in mind streamlined creation of TFL shells / CSR

## TFLs

Author: **Trial Programmer (TP)**  
Approved: Medical Lead, **Trial Statistician, Lead Programmer**, Medical Writer

Together with MW as the main contributing author, selection of standard TFLs that are focusing on key study objectives. TS to help defining non-standards.

FUTURE

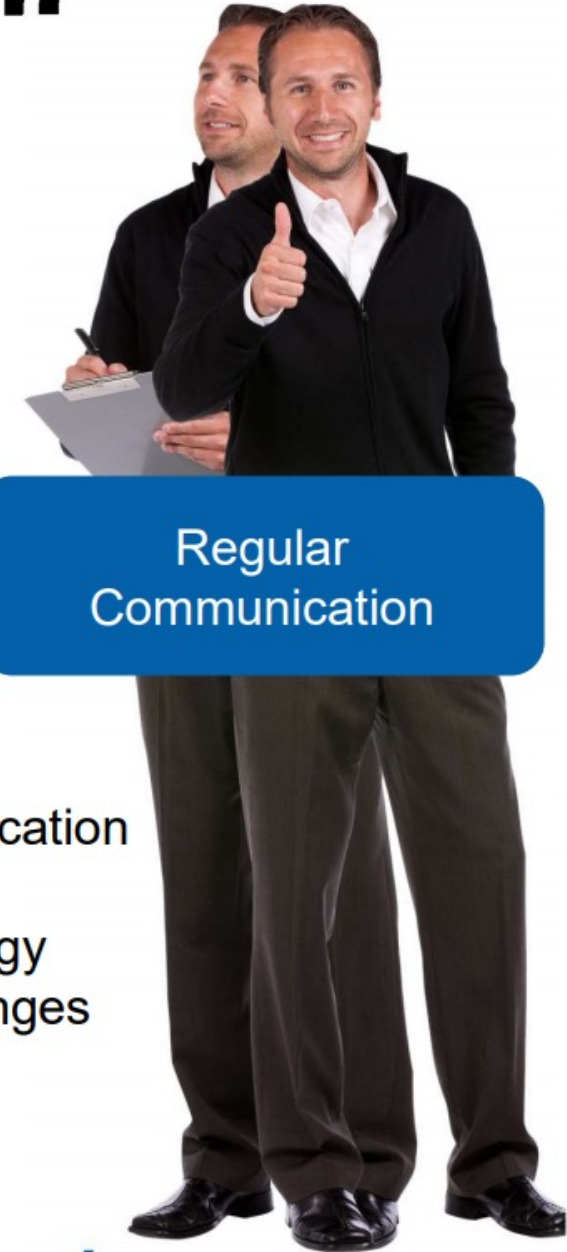
# Changing State and Mind



# Change Management Plan



- LT Alignment
- Respected leaders
- Targeted communication
- Integrated with a bigger strategy
- Upskilling for all parties
  - R – Exploration
  - Sign off authority
  - Influence expansion
- Clear scope
- Transition training
- Tailored documentation/communication
- Pilot teams & Studies identified
- Support infrastructure & technology
- Share with community the challenges and successes
- Roll out
- Follow up and support



Regular  
Communication

# Key Challenges – 3 Themes

Associates needs & concerns:



## – TFL specification



Training :

- How to review protocol
- How to review SAP
- What's needed in a CSR



## – Tools & roles

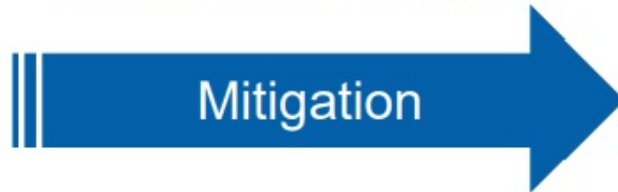


Training :

- How to use TFL standards
- How to create TFL shells
- Role expectations
- Update SOP & RACI
- Transition documentation
- Technology adoption



## – Confidence Building



Controlled exposure:

- Co-development period
- Process change for CSR only
- Migration plan
- Regular follow up meetings

# Technology application

**1 Select or Design your template (Drag & Drop)**

NOVARTIS Patient Listing Generator

Portfolios > Output Builder

1 Template Library 2 Dataset 3 Columns 4 Data Filter 5 Grouping 6 Preview

Build from scratch

or select existing from the list

- AE Adverse Events
  - AE1001 Adverse events**
  - AE1003 Dose limiting toxicity (DLT) by dose level
  - AE1009 Case retrieval strategy listing
  - L\_AE\_301 Deaths
  - L\_AE\_302 Deaths prior to starting treatment
  - L\_AE\_304 Adverse events among subjects who v
- ANS Analysis Datasets
- ANP Antineoplastic data
- BMX Biomarkers
- DM Demographics
- DS Disposition
- EG ECG Test Results
- EFO Efficacy - oncology
- EX Exposure
- IMG Imaging
- IE Inclusion/Exclusion Criterion Not Met
- CO Investigator comments
- LB Laboratory Test Results
- MMI Monitoring Metrics

Listing xx.x.x-x.x (Page x of x)

Adverse events  
Safety set

Planned Treatment for Period 01: Treatment A  
AGEORGN: XXXXXX

| Country/<br>Subject<br>identifier | Age/<br>Sex/<br>Race | Sev<br>event | Reported term<br>Preferred term<br>System organ class | Start<br>date<br>time/<br>day | End date<br>time/<br>day | End rel.<br>to ref./<br>day | Dur<br>ation<br>(day) | Sev<br>Toxi<br>ty | Cau<br>sal<br>ity | Action<br>taken<br>with<br>med. | Med<br>or<br>ther.<br>Out<br>come | Time<br>to<br>most<br>recent<br>dose<br>(day) | Date<br>of<br>most<br>recent<br>dose |
|-----------------------------------|----------------------|--------------|-------------------------------------------------------|-------------------------------|--------------------------|-----------------------------|-----------------------|-------------------|-------------------|---------------------------------|-----------------------------------|-----------------------------------------------|--------------------------------------|
|                                   |                      |              | Fainting/Syncope<br>/Gastrointestinal<br>disorders    | yyyy-mm<br>-dd/SS             | yyyy-mm<br>-dd/SS        | 19                          |                       | Sev<br>GI         | 1                 | 5                               | 10                                | 3                                             | 12                                   |

**2 Select your variables**

NOVARTIS Patient Listing Generator

Portfolios > Output Builder

1 Template Library 2 Dataset 3 Columns 4 Data Filter 5 Grouping 6 Preview

Columns

New Column +

Country/  
Subject  
identifier

Age/  
Sex/  
Race

Start  
date  
time/  
day

End  
date  
time/  
day

End rel.  
to ref./  
day

Dur  
ation  
(day)

Sev  
Toxi  
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sal  
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Action  
taken  
with  
med.

Med  
or  
ther.  
Out  
come

Time  
to  
most  
recent  
dose  
(day)

Date  
of  
most  
recent  
dose

Options

| N/A | Country/<br>Subject<br>identifier | Age/<br>Sex/<br>Race | Start<br>date<br>time/<br>day | Dur<br>ation<br>(day) | Out<br>come | Date<br>of<br>most |
|-----|-----------------------------------|----------------------|-------------------------------|-----------------------|-------------|--------------------|
|     |                                   |                      |                               |                       |             |                    |

Line Break After:

**3 Render your output they way you want**

Interactive or static

NOVARTIS Patient Listing Generator

Portfolios > RA Outputs

Create Output

| Description | Reference ID | Created at                 | File name | Author | Status    |                                                          |
|-------------|--------------|----------------------------|-----------|--------|-----------|----------------------------------------------------------|
|             |              | 2020-08-10T11:13:14.258502 |           |        | DRAFT     | Edit                                                     |
|             |              | 2020-08-09T22:36:34.447542 |           |        | DRAFT     | Edit                                                     |
|             |              | 2020-07-30T10:13:04.166930 |           |        | DRAFT     | Edit                                                     |
| List        | 1.1          | 2020-07-30T09:58:51.406843 | 1.1       |        | PUBLISHED | View in Browser Generate RTF Export to Excel (xlsx) Edit |

# Business benefits

- Associates focused on lean CSR
  - Reduction in number of outputs specified
- Higher adoption of standards
  - Faster execution and validation
- Growing number of SP talent who can specify and report
  - Supports future capability in the data scientist / engineer direction
- Growing number of Biostatisticians who develop R solutions for exploratory analysis
- Demonstrated that role change can occur seamlessly in a large complex organization

# Key Findings



- Successful role change implemented
  - Accepted by associates, functions and Clinical Trial Teams
  - No negative consequences
  - Large and complex organization not a limiting factor
- Its a journey
  - Confidence of associates to challenge is growing
  - Issues are discussed in dedicated RAP forums
  - Continuous knowledge sharing
  - Course corrections are sometime needed
  - How do you show progress?
- Factors for success
  - Clear scope
  - Timely & tailored training provision
  - Regular and tailored communications
  - Identification and mitigation of associate/team pain points
  - Clear guidance for roles and responsibilities
  - Co-development period
  - Associates gaining new skillset and responsibilities

# What is still to be done?

- 1) Enhancement of the **TFL Standard Library**
- 2) Develop **integrated governance** and get capability **web tool interfaces**
- 3) Measure performance with **realtime KPIs** for number of standards and output reduction
- 4) Continue our journey towards **R Shiny and other visualization tools**

... we are not yet there ....  
.....but definitely on the way

