MAX TOOLKIT OVERVIEW
The Analysis and Interpretation element

This overview presentation is the third in a series of four. We recommend that these overviews are read in order. Please visit the MAX toolkit main page to access the other overview presentations.

The MAX toolkit

Developed in partnership with local authority (LA) staff associated with the **Adult Social Care Survey** (ASCS) and **Personal Social Services Survey of Adult Carers in England** (PSS SACE or Carers Survey) and launched on 30 June 2016.

Aims to support LA analysts and their managers to:

- **Transform the national surveys into a large piece of local research**

- **Translate survey data into meaningful results that will inform local service & performance improvements**.

Supplements **NHS Digital** survey guidance and is designed to be implemented with minimal time and resources.

Why spend time on analysis?

Reason 1: to improve the local relevance and value of ASCS & PSS SACE data.

The surveys are sent to a large sample of adult service-users and carers in your area and

- include **demographic questions** that can be used to explore a range of issues (e.g. the factors that affect quality of life), and

- collect **respondent comments** that can be analysed thematically to provide the **contextual information** needed to understand the rationale underlying the responses to questions (e.g. why people feel unsafe).

Further analysis may help you to identify priorities for local improvements.

Reason 2: to fulfil the local information needs of LA decision-makers (e.g. managers, commissioners)

The **quantitative** (numerical) data collected by the ASCS & PSS SACE can be used to **explore the relationships between variables** and the **differences between respondent groups** and answer a range of questions including:

Which groups (if any) are reporting unmet needs?

What factors are associated with these unmet needs and are these within the control of adult social care services?

Findings from the thematic analysis of respondent comments (**qualitative data**) can supplement this analysis and are **more useful** to decision-makers who are unable to make sense of or use 'descriptives' (e.g. frequency data).

Examples of questions that can be answered with further analysis

Are any service users or carers reporting poor outcomes?

What may explain this?

Why do some of our service users feel unsafe?

What may explain any variations in performance?

What is the impact of our services on QOL? How do we compare to other LAs?

What factors are associated with good QOL?

What do we need to do to improve reported outcomes?

Reason 3: to produce analysis findings that can inform local service improvement activities

By fulfilling the information needs of LA decision-makers, the findings from focused ASCS and PSS SACE analysis can also inform local service improvement activities.

| Establishing possible causes for reported outcomes | Shaping design & delivery of new & existing services | Exploring local variations & issues (e.g. in unmet need) | Informing commissioning & management |

Analysis of findings may also help front-line staff and practitioners to adapt their day-to-day practice to improve service delivery and user-reported outcomes.

Reason 4: to maximise the value of existing resources (including staff time and LA funds)

All LAs with adult social care responsibilities are required to conduct the ASCS and PSS SACE. This costs **considerable time and money**!

Focused analysis can improve the local relevance, value and use of survey data and, by doing so, **ensure these resources are not wasted**.

In combination with local modifications to the surveys, focused analysis can also **reduce the need for further research and consultation**.

Focused analysis is less time-consuming than generalised 'descriptive' analysis and therefore **streamlines analysis and reporting activities**.

What supports local analysis?

A number of facilitators and local practices were reported by LA staff involved in earlier research and consultations.

Local practice	Description
Survey modifications	Adding local questions and/or modifying the sample frame to support in-depth analysis of particular respondent groups
Further analysis	Inferential tests (e.g. chi square) to explore relationships between survey variables & differences between respondent groups
Use of supplementary data	Referring to existing data sources (e.g. local research, respondents' comments) to fill the 'gaps' and/or make sense of analysis

Engaging with potential 'consumers' of survey data at key stages of the survey process was also identified as useful.

What hinders local analysis?

Barriers that hindered the local analysis and interpretation of ASCS and PSS SACE data were also reported.

Barriers	Description
Engagement difficulties	Engaging with potential consumers of survey data (e.g. commissioners, managers) to identify and fulfil local information needs
Uncertainty how to conduct analysis	Handling volumes of data produced by the surveys; identifying and conducting the appropriate tests
Making sense of analysis findings	Survey data seen as too broad to establish attribution and/or the significance of ASCOF comparisons

Insufficient time and resources and limiting perceptions about the purpose and local value of survey data were also reported.

The analysis element of the MAX toolkit

Element contains excel-based analysis tools, instructions and training materials.
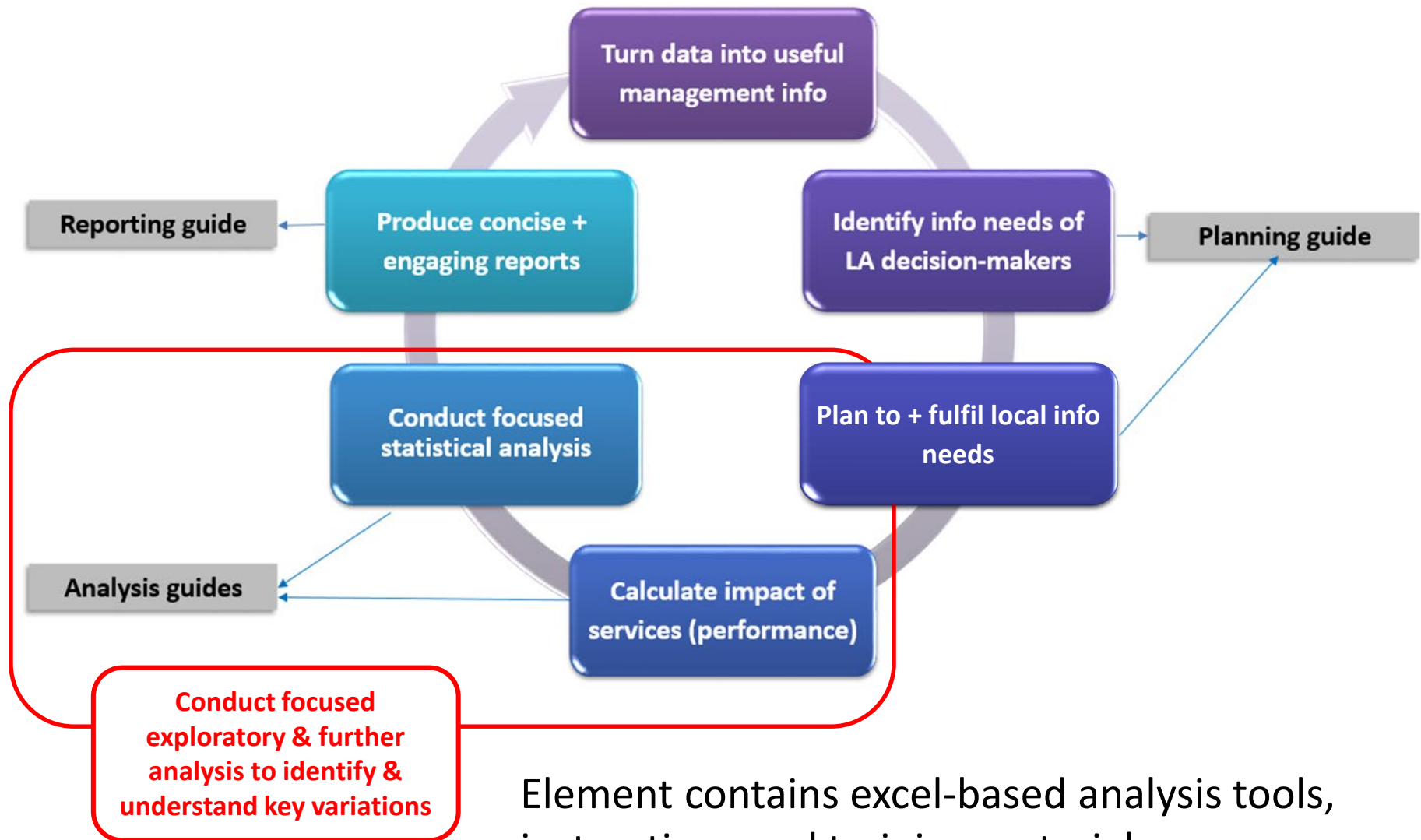
The MAX analysis guides

Survey-specific guides provide suggestions on how to conduct focused and useful analysis.

Explore data: conduct **descriptive analysis** to:

- Establish general trends in reported outcomes
- Measure the impact of services on QOL
- Develop profiles
- Identify areas of potential interest or concern

Conduct further analysis: conduct **inferential analysis** to:

- Identify statistically significant relationships between survey variables (e.g. satisfaction and control) and/or differences between groups (e.g. based on age, primary support reason)

All guides contain links to relevant tools and training resources.

Analysis tools included in MAX toolkit

The MAX toolkit contains **Excel-based analysis tools**, **step-by-step instructions** and **training resources** so should be accessible to all LA analysts.

Tool	Function
Cross-tabulations	**Descriptive**: explore relationship between two categorical variables (e.g. age + control)
Chi-square	**Inferential**: test whether relationship between two categorical variables is statistically significant [SS] (e.g. age + control)
Independent t-test	**Inferential**: test if difference between the means of two unrelated groups on the same continuous dependent variable is SS (e.g. SCRQoL for men vs. women).
ANOVA	**Inferential**: test if difference between the means of two or more unrelated groups on the same continuous dependent variable is SS (e.g. satisfaction + SCRQoL).
Adjustment calculators	Adjusts ASCOF 1A and 1D to provide **more accurate estimates of service impact** on service user and carer quality of life.

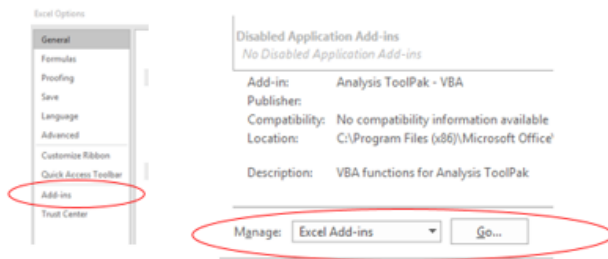| WHAT DO YOU WANT TO DO?	EXAMPLE RESEARCH QUESTION	ANALYSIS	TOOL	INSTRUCTIONS	TUTORIAL	LINK
Describe dataset (in other words, conduct descripives analysis)						
Calculate more accurate estimates of service impact on quality of life	*What is the impact of our services on carer-reported quality of life?*	**Adjustment calculations**	●	●	●	X
Summarise and explore the relationship between two variables	*Does satisfaction vary between different groups of service users (e.g. characterised by age, ethnicity)?*	**Cross tabulations**	●	●	●	X
Establish whether there is a statistically significant association between:						
two categorical variables	*Which of our service users are reporting unmet safety needs?*	**Chi-square**	●	●	●	X
the means of two unrelated groups	*Which of our carers are reporting difficulties in finding information?*	**Independent t-test**	NA	●	●	X
the means of two or more unrelated groups	*Are service users with low SCRQOL also reporting poor outcomes in other areas?*	**Analysis of variance (ANOVA)**	NA	●	●	X

Screen shot of analysis page in MAX toolkit

Getting started with analysis

Microsoft Excel 2010 or later + Analysis ToolPak. See **installing the analysis toolpak and real statistics resource pack** in MAX toolkit.

1. Click the **File** tab, and then click **Options**.
2. Click **Add-Ins**, and then in the **Manage** box, select **Excel Add-ins** and then select **Go**.

Excel Options

General
Formulas
Proofing
Save
Language
Advanced
Customize Ribbon
Quick Access Toolbar
Add-ins
Trust Center

Disabled Application Add-ins
No Disabled Application Add-ins

Add-in: Analysis ToolPak - VBA
Publisher:
Compatibility: No compatibility information available
Location: C:\Program Files (x86)\Microsoft Office\

Description: VBA functions for Analysis ToolPak

Manage: Excel Add-ins   Go...

Understanding of basic statistical terminology. See **getting started with statistics** in MAX toolkit.

central limit theorem)[2] that a distribution will fall symmetrically around the mean to produce a **bell-shaped curve** if a sufficient sample is drawn. This means that most values will be grouped near the centre of the distribution and the remaining values will tail off away from the mean in equal measures.

2.5% 13.5% 34% 34% 13.5% 2.5%
-3   -2   -1   0   1   2   3
Standard Deviations
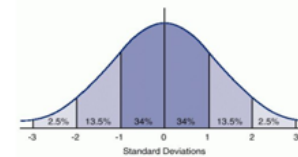
The **normal distribution** which produces a bell-shaped curve and plots the percentage of the data-set that should fall within a given range.

Exploratory data analysis (EDA) guides

Guides focus on **descriptives analysis** and can support analysts to navigate the ASCS and PSS SACE datasets and identify areas for further analysis.

What is the impact of our services on service-user quality of life?

Impact on SCRQOL now measured by **ASCOF 1J** (and will be discussed in next session) but **excel adjustment tools** in MAX toolkit can be used to calculate previous scores and/or scores for carers.

STEP 2: ESTABLISH GENERAL TRENDS

Summarise current ASCOF scores (including adjusted QOL scores) and compare changes over time [**internal benchmarking**] and/or differences against comparator organisations [**external benchmarking**].

Indicator	2010/11	2011/12	2012/13	2013/14	2014/15	2016/17	Movement since 2014/15
(1A) Social Care - related quality of life *	18.7	19.2	18.9	19.1	19.4	18.9	↓ 0.5
(1J) Adjusted social care-related quality of life					1.15	1.35	↑ 0.2
(1B) The proportion of people who use services who have control over their daily life	74.3	76.5	74.2	75.4	77.2	77.2	
(1I) Proportion of people who use services and carers, who reported that they had as much social contact as they would like				72.3	73.2	78.4	↑ 5.2
(3A) Overall satisfaction of people who use service with their care and support	62.1	64.5	62.7	63.9	66.1	75.1	↑ 9.0
(3D) The proportion of people who use services and carers who find it easy to find information about services	57.4	59.2	53.4	55.2	58.9	72.7	↑ 13.8
(4A) The proportion of people who use services who feel safe	56.4	58.9	62.4	63.7	67.2	67.3	↑ 0.1
(4B) The proportion of people who use services who say that those services have made them feel safe and secure		57.3	58.2	59.2	64.2	65.2	↑ 1.2

* ASCOF 1A is measured on a scale of 0-24 while the remaining ASCOF indicators are measured as a percentage

An alternative approach to reporting ASCS and PSS SACE data which focuses on identifying the key characteristics of service user and carer groups.

Cross-tabulations tools in MAX toolkit can be useful for this activity.

Who are our service-users?

How do our service-users rate our services and support?

Which service-users are reporting unmet needs?

Suggestions and provisional questions that can be explored during analysis are provided in the guides.

STEP 4: IDENTIFY AREAS OF POTENTIAL INTEREST

Analysis should uncover areas that may require further investigations (i.e. more analysis!).

Areas	Description / examples
Marked changes in scores (e.g. ASCOF)	Improvements and/or deteriorations in reported outcomes over time; good or poor relative standing against comparator LAs and/or the national average.
Unmet needs	Low responses to QOL questions (e.g. I have no control over my daily life)
Dissatisfaction	Quite, very and extremely dissatisfied responses
Issues with information	Fairly or very difficult to find information responses
Groups who may require additional help	Service-users who are socially isolated, extremely anxious and/or depressed etc.,

Further analysis (FA) guides

Guides build on steps outlined in EDA guides and focus on **inferential analysis** (mainly chi-square). Aims to support LA analysts to **translate ASCS and PSS SACE datasets into meaningful management information**.

Structured on individual ASCOF domains (e.g. control over daily life [ASCOF 1B] and provides an overview of domain, factors that may affect reported outcomes in that domain and suggestions for analysis.

At request of LA collaborators, includes analysis scenarios for guidance.

Suggestions for further analysis

Each section is based on a series of questions that may help analysts to focus their analysis:

Does this noted trend in reported outcomes require us to take action?

Which service user groups (if any) are reporting these outcomes and why?

What actions can be taken to improve these reported outcomes?

ASCOF 1B: CONTROL OVER DAILY LIFE

Research question(s)	Analysis strategies	Potential value
of scenario		

Research question(s)	Analysis strategies	Potential value
Scenario: a considerable number of service users are reporting that they have little or no control over their daily lives		
Do service users who report little or no control over their daily lives report poor outcomes in other areas?	Determine whether little or no control over daily life is associated with other poor outcomes. For example: Control (Q3a) + Satisfaction with services (Q1) Control (Q3a) + Overall quality of life (Q2a) Control (Q3a) + Social contact (Q8a)	Analysis may help to establish whether action (e.g. changes to service provision) is required and that further analysis can be justified.
Example: David's analysis has shown that service users who report 'some' or 'no' control over their daily lives also tend to be socially isolated and report a poor quality of life. This suggests that remedial action is necessary and that further analysis (to establish the underlying issues and possible solutions) is required.		
Which of our service users are reporting little or no control over their daily lives? ASCOF function: identify the priorities for making improvements	Establish whether particular service user groups are reporting little or no control over their daily lives by exploring the levels of social contact reported by different groups. For example: Control (Q3a) + Age (data return) or Gender (data return) Control (Q3a) + Ethnicity (data return) Control (Q3a) + Primary support reason (data return) Control (Q3a) + Support setting (data return) Control (Q3a) + Mechanism of delivery (data return)	Analysis may help you to identify between-group variations in control. Such variations, in turn, may uncover areas of unmet need and/or inequality that require remedial action and/or areas of good practice than can be shared and implemented elsewhere in the organisation.

Research question(s)	Analysis strategies	Potential value
Example: Dave conducts a series of chi-square tests and finds a significant association between age and control: in particular, that older service users (aged 65+) feel less in control than younger service users.		
Why are these service users reporting unmet control needs? ASCOF function: inform the strategic planning and leadership role for local commissioning	Establish the characteristics and reported outcomes of the service user groups (SUGs) who are reporting little or no control over their daily lives and compare these with the wider service user population. For example: SUG + Gender (data return) SUG + Primary support reason (data return) SUG + Mechanism of delivery (data return) SUG + Satisfaction (Q1) SUG + SCRQOL variables (e.g. control) (Q3a-11) SUG + Impact of services on control (Q3b) SUG + Ease of finding information (Q12) SUG + Health (Q13 +14) SUG + ADLS (Q15-16) SUG + Design of home (Q17) [Chi-square] SUG + Access to local environment (Q18) SUG + Receipt of practical help (Q19)	Analysis may help you to uncover the potential reasons for unmet control needs. Such findings can be used to inform local decision-making and performance improvements.[6]
Example: Dave has found that many older service users report difficulties in performing daily living tasks by themselves (e.g. getting out of a chair) and/or report higher levels of anxiety and depression than younger service users.		

Recommended strategies: use supplementary sources; consider practical implications / application of findings.

Accessing the MAX toolkit

Available via restricted access pages of the project website
https://www.maxproject.org.uk/
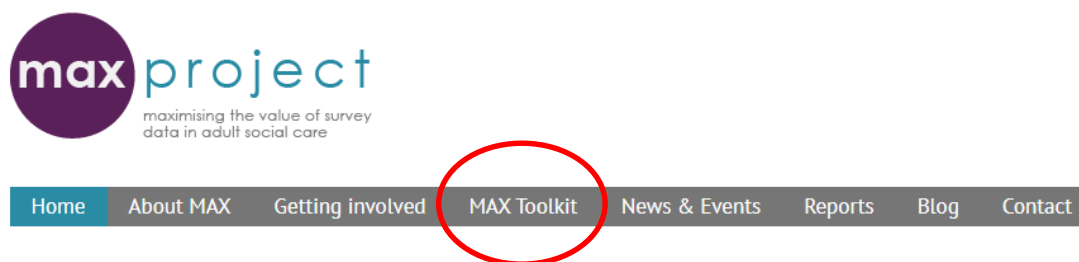
Alternatively, if you have an account, you can access the MAX toolkit via https://www.maxproject.org.uk/max-toolkit/zdtgh1974/ [click on the toolkit logo]

Navigating the MAX toolkit

The guides can be accessed via the main toolkit page. The individual tools can be accessed via the guides or the downloads page.

HOW TO USE THE MAX TOOLKIT

The MAX toolkit contains a range of guides, tools and training resources, and is structured around the three stages of the survey process: **planning**, **analysis and interpretation**, and **reporting**. Links to the relevant elements are provided in the guides detailed below or on the downloads page. An overview of the MAX toolkit can also be accessed here.

Please note that the guides in the MAX toolkit should be read alongside the guidance provided by NHS Digital and are currently in draft form. You will be notified of any updates by email.

1. PLANNING THE KEY STAGES OF THE SURVEY PROCESS

Planning the key stages of the survey process can help you to transform the ASCS & PSS SACE into a large piece of local research.

The **MAX PLANNING GUIDE** summarises a range of strategies that you can use to identify and fulfil the information needs of the decision-makers and practitioners within your organisation using survey data and other existing resources.

Further information about the planning element of the MAX toolkit can be found in the MAX planning overview and the importance of planning and stakeholder engagement webinar presentation.

2. CONDUCTING FOCUSED EXPLORATORY & FURTHER ANALYSIS

Focused analysis can help you to translate ASCS & PSS SACE data into meaningful results that can guide local service and performance improvement activities.

Overview of the MAX toolkit elements

Further information about the three main elements of the MAX toolkit have been developed and are included in the MAX toolkit:

- Planning overview
- Analysis and interpretation overview
- Reporting overview

Pre-recorded presentations focusing on individual analysis tools, conducting further analysis and measuring impact are also provided on the restricted access pages of the MAX toolkit. Registration is required to access these.

Further Information

To find out more about the MAX project, download the reports on earlier research activities or access the MAX toolkit:

Website: www.maxproject.org.uk

Email: maxproject@kent.ac.uk

Disclaimer

Department of Health and Social Care disclaimer: The MAX toolkit and website are based on independent research commissioned and funded by the NIHR Policy Research Programme (Maximising the value of survey data in adult social care (MAX) project and the MAX toolkit implementation and impact project). The views expressed on the website and in publications are those of the author(s) and not necessarily those of the NHS, the NIHR, the Department of Health and Social Care or its arm's length bodies or other government departments.