

DOUBLE DIAMOND WORKSHOP ON YOUNG RIDERS





Highways England

Double Diamond Workshop on Young Riders

In July 2017, Highways England East commissioned two pieces of work: an extensive analysis of the injury collisions involving motorcyclists in the Eastern Region and a review of activities delivered in the East which seek to reduce the risk of motorcyclists. The conclusions of the two pieces of work were that:

- Whilst young motorcyclists represented a large percentage of those killed or seriously injured on the region’s roads, there was a lack of focus on this group in the interventions;
- Interventions rarely included robust evaluations, and this was also the case for young rider evaluations;
- And there was a lack of a consistent regional message across motorcycle interventions.

In February 2018, a two-day ‘Double Diamond’ workshop took place to try to address some of these conclusions. With a focus on young riders, the workshop followed a process to use data and evidence to understand the problem and target audience and consequently, work through a behavioural diagnosis to determine how the problem might be addressed. The intention was to ensure that an evaluation plan was integral to the process and that there was an emphasis on identifying a regional solution to create consistency.

This report is a summary of the workshop and sets out the next steps for Highways England and its partners in the East.

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FORMAT OF THE WORKSHOP

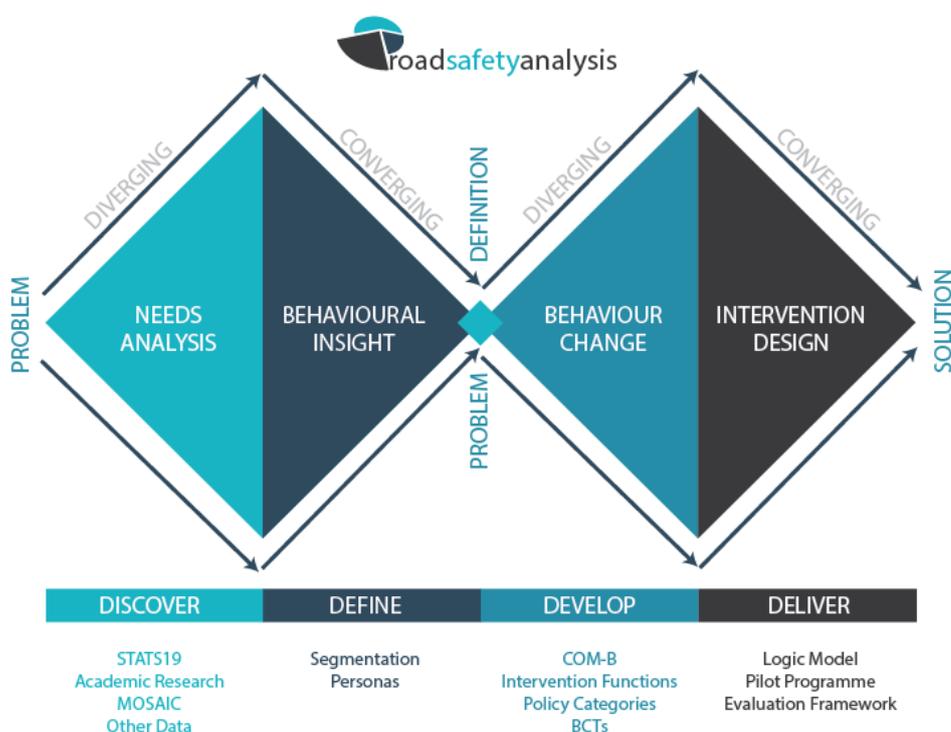
The two-day workshop involved 10 selected representatives of local authorities, police and partnerships from the East of England as well as a representative of the motorcycle industry.

Dan Campsall	Road Safety Analysis (facilitator)
Tanya Fosdick	Road Safety Analysis (facilitator)
Lorraine Willis	Highways England (organiser)
Simon Deards	Bedford Borough Council
Matt Staton	Cambridgeshire County Council
Will Cubbin	Essex County Council
Iain Temperton	Norfolk County Council
Iain Watson	Suffolk County Council
Sam Mason	Suffolk County Council
Martin Andrew	Suffolk County Council
Simon Burgin	Cambridgeshire Police
Tim Oxley	Central Bedfordshire Council
Karen Cole	Motorcycle Industry Association

The two days followed the 'Double Diamond' process, which sets out four stages:

- Discover – insight into the problem (a divergent stage to ensure that full insight is achieved)
- Define – the area to focus on (a convergent stage, refining and narrowing the focus)
- Develop – potential solutions (a divergent stage to ensure that all options are explored)
- Deliver – solutions that work (a convergent stage, refining and narrowing the focus).

In this workshop, the 'define' and 'develop' stages included working through the stages of the Behaviour Change Wheel (1), whilst 'deliver' included a focus on evaluation and measuring success.



NEEDS ANALYSIS

The needs analysis stage of the Double Diamond involved a review of the existing information related to young riders, to ensure that participants were fully familiar with the problems facing this target group and to discover who the target group are.

COLLISION ANALYSIS

A full analysis of the circumstances involved in collisions featuring motorcyclists, including young riders (16-25), in the East, is covered in the report (2) produced in 2016 and won't be repeated here. However, some of the main findings (and related insights) which were highlighted in the 'discover' phase are:

- Young riders in collisions are 90% male
- There is a seasonal effect with a peak in September (particularly amongst 16 and 18-year olds)
- Is this change related to the 2015 increase in education leaving age to 18 years old?
- 16 to 25-year olds have a 'flatter' seasonal effect than older riders – more dependent on mode? Work? (Older riders tend to be involved in crashes in the summer)
- Sales of mopeds have dropped in the last four to five years and there has been a migration to larger bikes (125cc). For example, moped PARC (number of vehicles currently licensed) has fallen from 166,500 in 2016 to 97,000 on 2015 (all sales, regardless of age). (3)
- Peak in 17-year olds
- 16 to 20-year olds are closer to home at the time of collision than older riders
- More deprived (based on IMD) – more likely to be at college, than sixth form (as colleges tend to be more vocational than sixth forms)
- Some 'rural' effect – no alternative modes of transport
- Majority are urban crashes and 48% of all collisions are at urban junctions
- Observation is an issue for motorcyclists AND other vehicles
- Behaviours and manoeuvres highlighted in the collision analysis include close following, filtering, right turns and roundabouts (failure to give way)
- 62% of the contributory factors were assigned to the motorcyclist and include 'failed to look properly', 'misjudged path/speed' and 'exceeding speed limit'

The analysis raised a number of questions/facts about these riders:

- Can we do anything about SMIDSY (Sorry, Mate I didn't see you)?
- There is low technology on smaller motorcycles (so fewer safety features)
- There is a perception that 'it's about progress' (using the motorcycle to get there as fast as possible)
- There are particular issues with group riding, including the complex dynamic of the group, the social context and risks associated with keeping up with a group
- That these riders do not perceive themselves as a 'motorcyclist'
- Perception that there is no need for them to invest in training – they will be drivers soon and the requirements of the CBT suggest training is unnecessary.

MOSAIC INSIGHT

The postcodes of motorcyclists involved in injury collisions can be linked to socio-demographic data, including Mosaic Public Sector (4). This classification system can be used to understand the types of communities our target audience come from. There were three Mosaic Groups which featured strongly in the collision analysis in the East:



- **Rural Reality (Group G):** Representing 17.8% of the young motorcyclists involved in collisions in the East, these communities include households where there is an over-representation of motorcycle ownership. They have low confidence in local police.
- **Family Basics (Group M):** Representing 15.8% of the young motorcyclists involved in collisions in the East, these communities are more deprived and have school aged children. They also have a low confidence in local police.
- **Aspiring Homemakers (Group H):** Representing 12.9% of the young motorcyclists involved in collisions in the East, these communities are younger families and are driven by ‘affordability’.

SUPPORTING EVIDENCE

A review of the existing literature linked back to the collision analysis. A summary of relevant literature was provided to participants in advance of the workshop and included evidence about:

- **Conspicuity**
 - The visibility of the rider, including clothing, light configurations, road positioning, speed. (5) (6) (7)
 - Driver perception, including looming, tracking and that there are four different types of failed to look (did not look; inadequate looking; adequate looking but did not see; and looked, saw, but failed to judge approach). (8) (9)
- **Behaviours**
 - Non-usage of protective clothing (beliefs about benefits) (10)
 - Social norms – especially speed (11)
 - Categorised as ‘car aspirants’, for whom limited information can make them significantly more risk-conscious, showing they have high educability (12)
 - Sensation seeking (13)

LESSONS FROM OTHER MOTORCYCLE INTERVENTIONS

A number of current or previous interventions were reviewed to understand their strengths, weaknesses, opportunities and threats (SWOT analysis). The table below summarises these.

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Benefit of incentivised scheme • Comprehensive training continuum • Sensitised to risk • Tailored approaches (local roads/delivery riders) • Appeal to BAME audience • Engaging activity • Audience ‘priming’ • Peer-led • Segregated infrastructure 	<ul style="list-style-type: none"> • Inconsistent delivery • Incentivisation? (requiring funding) • Enabling environment • Limited impact • Parental understanding & engagement • Evaluation • Measurability • Isolating the right audience • Road conditions • Model for telematic insurance & scale of market
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Post-CBT training – recruitment through trainers • Trainers that ‘get it’ • Ability to ‘normalise’ training • Motorcycle show attendees • Selecting an appropriate delivery agent • Social influencers • Incentives for parents 	<ul style="list-style-type: none"> • Wider content/system – economy and education • Financial & time ‘limit’ • ‘Culture’ • Sustainable in the system • Alienation



There were a range of interventions which were discussed to arrive at the SWOT analysis above. These included:

- Training linked to Compulsory Basic Training (CBT)
- Social media campaigns
- Attendance at colleges
- Engineering (including bus lane access)
- Workplaces (incentives)
- Enforcement
- Wheels to Work
- Cycling initiatives
- Parental responsibility schemes

BEHAVIOURAL INSIGHT

The 'discover' needs analysis provided an insight into who to target; which behaviours and issues feature in the collisions; and what the external factors influencing behaviours and success of interventions might be.

The next stage of the double diamond process is to start to refine and define the focus of any interventions. Participants were divided into groups to explore particular behaviours identified in the needs analysis. Using the Behaviour Change Wheel (1) as a guide, participants sought to define the problem in behavioural terms (what behaviour? Where does the behaviour occur? Who is involved in performing the behaviour?) and created a long list of candidate target behaviours which could bring about change. These candidate target behaviours were then prioritised¹ according to:

- How much impact changing the behaviour will have on the desired outcome?
- How likely is it that the behaviour can be changed?
- How likely is it that the behaviour will have a positive/negative impact on other behaviours?
- How easy will it be to measure the behaviour?

Overall desired outcome:	Make young riders more visible, especially at junctions			
Potential target behaviours	Impact of behaviour change	Likelihood of changing behaviour	Spillover score	Measurement score
Wear official high visibility clothing	Very promising	Unpromising but worth considering	Unpromising but worth considering	Very promising
Wear contrasting clothing	Promising	Promising	Unpromising but worth considering	Promising
Wear clothing with reflectivity	Very promising	Promising	Unpromising but worth considering	Promising
Improving road positioning to become more visible	Very promising	Promising	Very promising	Promising

¹ The Behaviour Change Wheel asks that prioritisation is based on reaching one of the following decisions: 1) That the behaviour appears very promising as a target behaviour; 2) the behaviour is quite promising as a target behaviour; 3) the behaviour appears unpromising but is worth considering as a target behaviour; or 4) the behaviour is not acceptable as the target behaviour.



Improve riders' understanding of the issues around visibility	Promising	Promising	Unpromising but worth considering	Promising
Improve lighting, including context	Promising	Unacceptable	Unacceptable	Very promising
Improve drivers' understanding of the issues around visibility	Very promising	Unpromising but worth considering	Promising	Unpromising but worth considering

Overall desired outcome:	Increase the number of young riders wearing helmet, gloves, boots, jacket and trousers (personal protective equipment – PPE) when riding			
Potential target behaviours	Impact of behaviour change	Likelihood of changing behaviour	Spillover score	Measurement score
Use employers to make the wearing of PPE compulsory	Promising	Promising	Unpromising but worth considering	Promising
Elicit support from education establishments to encourage PPE wearing	Promising	Unpromising but worth considering	Unpromising but worth considering	Promising
Make PPE more attractive & at a lower cost (VAT issues)	Promising	Promising	Unpromising but worth considering	Promising
Educate parents to encourage them to buy PPE for their children	Unpromising but worth considering	Unpromising but worth considering	Promising	Unpromising but worth considering
Make young riders realise they are motorcyclists	Promising	Unpromising but worth considering	Promising	Unacceptable
Make young riders understand why PPE is so important	Promising	Unpromising but worth considering	Promising	Unacceptable
Identify alternative clothing items which protect but are not PPE	Promising	Unpromising but worth considering	Unpromising but worth considering	Unpromising but worth considering

Overall desired outcome:	Reduce risk taking and increase responsibility amongst young riders, especially at urban junctions, in congested environments and on rural corners			
Potential target behaviours	Impact of behaviour change	Likelihood of changing behaviour	Spillover score	Measurement score
Encourage young riders to adopt slower speeds at junctions	Very promising	Unpromising but worth considering	Very promising	Unpromising but worth considering
Encourage young riders to ride defensively	Very promising	Promising	Very promising	Promising
Encourage improved hazard perception amongst young riders	Very promising	Promising	Very promising	Promising
Encourage young riders to aspire to 'good riding'	Promising	Unpromising but worth considering	Very promising	Unpromising but worth considering



Encourage young riders to seek training	Very promising	Promising	Very promising	Promising
Reduce opportunities for showing off by penalising negative behaviour	Promising	Unpromising but worth considering	Promising	Promising
Reduce opportunities for showing off by incentivising positive behaviour	Promising	Promising	Promising	Promising
Encourage young riders to use alternative modes	Very promising	Unpromising but worth considering	Promising	Promising

The prioritisation exercise facilitated a refinement of the potential target behaviours. Under broader headings, there were nine key target behaviours which were thought to have the greatest potential for positively impacting the key outcomes. The single word in brackets are used later in the process as an abbreviation.

1. Improve driver understanding of the needs and behaviours of young riders (drivers)
2. Encourage appropriate clothing to be worn, to improve both protection and visibility (clothing)
3. Improve rider positioning, particularly at junctions (positioning)
4. Improve rider understanding of their risk and the need to mitigate it (risks)
5. Reduce risk at junctions (junctions)
6. Improve speed choices, especially at junctions (speed)
7. Work with support structures (such as employers, education establishments, parents and peers) to tackle some of the other eight priorities (support)
8. Improve hazard perception skills of young riders (hazard)
9. Improve young rider attitudes towards training and the quality of available courses (training)

BEHAVIOUR CHANGE

The next part of the process was to understand these behaviours in more detail, determining who needs to perform the behaviour; what they have to do and when; where and how they need to do it; and with whom. This is another divergent stage, where all the opportunities are opened up, before refinement begins again.

Target Behaviour	Improve driver understanding of the needs and behaviours of young riders
<i>Who</i> needs to perform the behaviour?	All road users
<i>What</i> do they need to do differently to achieve the desired outcome?	Understand limitations of visual perceptual performance and apply mitigation strategies
<i>When</i> do they need to do it?	Particularly at junctions (or on approach)
<i>Where</i> do they need to do it?	At junctions (or on approach)
<i>How often</i> do they need to do it?	Always
<i>With whom</i> do they need to do it?	All other road users



Target Behaviour	Encourage appropriate clothing to be worn, to improve both protection and visibility
Who needs to perform the behaviour?	Young riders and their parents
What do they need to do differently to achieve the desired outcome?	Wear high contrasting protective clothing that is better than what is currently worn
When do they need to do it?	At all times and especially at the point of bike purchase and licensing
Where do they need to do it?	At dealerships/retailers and when selecting CBT trainers, insurance, licensing
How often do they need to do it?	At all times whilst riding
With whom do they need to do it?	Parents

Target Behaviour	Improve rider positioning, particularly at junctions
Who needs to perform the behaviour?	Young riders
What do they need to do differently to achieve the desired outcome?	Understand the need and benefit of better riding positions and know what to do as well as want to do it.
When do they need to do it?	Throughout every ride
Where do they need to do it?	Throughout every ride
How often do they need to do it?	Constantly so it becomes second nature
With whom do they need to do it?	Themselves and with peers

Target Behaviour	Improve rider understanding of their risk and the need to mitigate it
Who needs to perform the behaviour?	Young riders
What do they need to do differently to achieve the desired outcome?	Engage with issues around their CBT and have an increased desire to embrace understanding
When do they need to do it?	At first point of riding and at point of choosing to ride
Where do they need to do it?	On their CBT or via NDORS
How often do they need to do it?	More than once
With whom do they need to do it?	Trainers/peers/mutual support/'model' riders

Target Behaviour	Reduce risk at junctions
Who needs to perform the behaviour?	Planners and designers
What do they need to do differently to achieve the desired outcome?	Include an understanding of motorcyclists in the design process
When do they need to do it?	When designing schemes
Where do they need to do it?	When looking at existing infrastructure and building new schemes
How often do they need to do it?	Whenever designing/changing junction
With whom do they need to do it?	Developers, auditors, motorcycle and cycle experts



Target Behaviour	Improve speed choices, especially at junctions
Who needs to perform the behaviour?	Young riders (and all drivers)
What do they need to do differently to achieve the desired outcome?	Understand appropriate speeds and know what to do. Have the confidence to adopt the appropriate speed and what to do it.
When do they need to do it?	Throughout every ride
Where do they need to do it?	Throughout every ride
How often do they need to do it?	Constantly so it becomes second nature
With whom do they need to do it?	Themselves and with peers

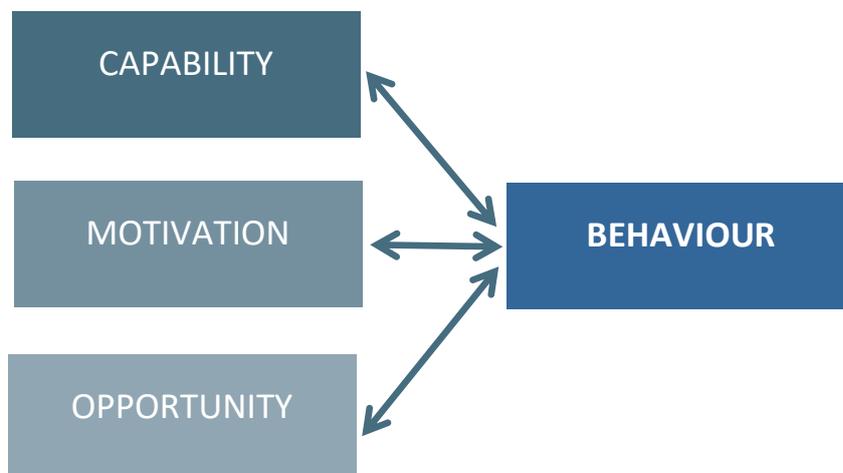
Target Behaviour	Work with support structures (such as employers, education establishments, parents and peers) to tackle some of the other eight priorities
Who needs to perform the behaviour?	Parents, friends and partners, educational establishments, employers, drivers and the young riders themselves
What do they need to do differently to achieve the desired outcome?	Understand the need and benefits of changing these behaviours and being prepared to be unpopular
When do they need to do it?	Start before the young person starts riding and continue afterwards
Where do they need to do it?	Various places, dependent on the structure stakeholder
How often do they need to do it?	Depends on the type of support and the needs of the rider
With whom do they need to do it?	Young riders

Target Behaviour	Improve hazard perception skills of young riders
Who needs to perform the behaviour?	Young riders
What do they need to do differently to achieve the desired outcome?	Better observation and planning
When do they need to do it?	All the time
Where do they need to do it?	On the road
How often do they need to do it?	Always
With whom do they need to do it?	Themselves

Target Behaviour	Improve young rider attitudes towards training and the quality of available courses
Who needs to perform the behaviour?	Young riders, parents, employers, education
What do they need to do differently to achieve the desired outcome?	Pursue training
When do they need to do it?	Early in riding career
Where do they need to do it?	In a convenient way
How often do they need to do it?	Ongoing
With whom do they need to do it?	With competent, authoritative and credible trainers



Once the behaviours were explored in more detail, the next stage was to understand what could help the change occur. For this, the COM-B (1) model was used.



“The COM-B model is the starting point used by the Behaviour Change Wheel for understanding behaviour in the context in which it occurs. The central tenet of the model is that for any behaviour to occur:

1. There must be the ‘capability’ to do it: the person or people concerned must have the physical strength, knowledge, skills, stamina etc. to perform the behaviour;
2. There must be the ‘opportunity’ for the behaviour to occur in terms of a conducive physical and social environment: e.g. it must be physically accessible, affordable, socially acceptable and there must be sufficient time;
3. There must be sufficient strong ‘motivation’: i.e. they must be more highly motivated to do the behaviour at the relevant time than not to do the behaviour, or to engage in a competing behaviour.” (1)

All of the nine behaviours were reviewed to determine whether capability, opportunity or motivation needs to change in order for the desired outcome to be achieved. The Theoretical Domain Framework (TDF) was created to assist with the implementation of evidence-based theory, comprising of 15 domains linked to the COM-B model. (1) By using the TDF, it is easier to define which COM-B components need to change and why.

COM-B Components	TDF	Is there a need for change?
Physical capability	Physical skills	Improved search pattern (drivers) (hazard) More ‘active’ driving (drivers) (hazard) Riding appropriately (positioning)
Psychological capability	Knowledge	Knowledge around MC riding position (drivers) (hazard) Limitations in visual perception (drivers) (hazard) Knowledge around clothing choice (clothing) Understanding of what to do / how (positioning) (risks) (hazard) Being able to design for PTWs (junctions)



		<p>Knowledge around appropriate speed (speed)</p> <p>Lack of understanding of what support is needed (support)</p> <p>Knowledge of what training will achieve (training)</p>
	Cognitive and interpersonal skills	<p>Recognising presence & importance of PTWs (drivers)</p> <p>Justification of clothing choice (clothing)</p> <p>Justification of speed (speed)</p> <p>Hazard perception / Situational Awareness (hazard)</p> <p>Recognising importance of training (training)</p>
	Memory, attention and decision processes	<p>Attention & decision making (drivers)</p> <p>Deciding to wear (clothing)</p> <p>Dynamic decision making (positioning)</p> <p>Decision – speed choice (speed)</p> <p>Attention to limits (speed)</p> <p>Deciding to support (support)</p> <p>Recognising & responding to hazards (hazard)</p> <p>Decide training is a good idea (training)</p>
	Behavioural regulation	<p>Application of self-regulation / allowing space (drivers) (hazard)</p> <p>Application of self-regulation (clothing) (speed)</p> <p>Application of learned technique (positioning) (hazard)</p> <p>Confidence to take the position (positioning) (hazard)</p> <p>Confidence to select right speed (speed) (hazard)</p> <p>Legal / policy direction (support)</p> <p>Adherence to trained behaviours (training)</p>
Physical opportunity	Environmental context and resources	<p>In vehicle alerts, posters, route signage (drivers)</p> <p>Finance / cost implications (clothing) (support)</p> <p>Storage of kit at college (clothing)</p> <p>Clear signage (speed)</p> <p>Speed limiters (speed)</p> <p>Enabling access (support)</p> <p>Lining for bends (hazard)</p> <p>Helmet design (hazard)</p> <p>Hazard perception materials (hazard)</p> <p>Obstructions in the environment / foliage (hazard)</p> <p>Access to good quality / affordable training (training)</p>
Social opportunity	Social influences	<p>Role of media (?)</p> <p>Roles of bikers (drivers)</p> <p>Peer group pressure (clothing) (speed) (support) (training)</p> <p>Parental / employer (6) / education influence (clothing) (support) (training)</p> <p>Group riding (positioning) (speed)</p>
Reflective motivation	Professional/social role and identity	<p>Social role – positive prototypes (clothing) (speed) (support) (training)</p> <p>Acknowledgement you are ‘part of traffic’ (positioning)</p> <p>See themselves as a rider (risks)</p>
	Beliefs about capabilities	<p>Awareness of limitations (drivers)</p> <p>Self-efficacy (clothing) (positioning) (speed) (hazard) (training)</p>



		Involvability (clothing) (speed) Supporters need to understand risks (support)
	Optimism	Rarity of the event (drivers) (support) Unlikely to get caught (speed) Improve your riding (training)
	Beliefs about consequences	'They deserve what they get' (drivers) Unclear on benefits (clothing) (positioning) (hazard) (training) Beliefs of risks (risks) (support) Won't get hurt anyway (speed) (training) Cheaper insurance (training)
	Intentions	Consciously looking for MCs (drivers) They need to intend to wear (clothing) They need to intend to ride appropriately (positioning) Intend to utilise skills / knowledge (risks) (speed) (hazard) Intend to support (not abandon) (support)
	Goals	Purchase of kit as part of goal of riding (clothing) (support) Avoiding a ticket (speed) Keeping up with traffic (speed) Keeping YR safe (support) Developing Hazard Perception skills (hazard) Developing rider skills (training)
Automatic motivation	Reinforcement	Social reinforcement / peer reaction (clothing) (speed) Telematics feedback (positioning) (speed)
	Emotion	Embarrassment/peer pressure (clothing) (training) Satisfaction of making progress (positioning) (speed) Super-hero effect (speed) (training) Caring for social circle (support) (training)

The TDF diagnosis shows that there is a need for change across a range of domains. The table below shows how the need for is mapped across the COM-B components for the nine behaviours.



Target Behaviours	Physical Capability	Psychological Capability	Physical Opportunity	Social Opportunity	Automatic Motivation	Reflective Motivation
Improve driver understanding of the needs and behaviours of young riders	✓	✓	✓	✓		✓
Encourage appropriate clothing to be worn, to improve both protection and visibility		✓	✓	✓	✓	✓
Improve rider positioning, particularly at junctions	✓	✓		✓	✓	✓
Improve rider understanding of their risk and the need to mitigate it		✓				✓
Reduce risk at junctions		✓				
Improve speed choices, especially at junctions		✓	✓	✓	✓	✓
Work with support structures (such as employers, education establishments, parents and peers) to tackle some of the other eight priorities		✓	✓	✓	✓	✓
Improve hazard perception skills of young riders	✓	✓	✓			✓
Improve young rider attitudes towards training and the quality of available courses		✓	✓	✓	✓	✓

Now that there is an understanding of what needs to change and what the target behavioural outcomes are, the next stage is to identify how best to facilitate that change happening. Intervention functions are “broad categories of means by which an intervention can change behaviour.” (1)

The following table shows how the COM-B components can be used under different intervention functions.

COM-B Components	Intervention Functions								
	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental Restructuring	Modelling	Enablement
Physical Capability									
Psychological Capability									
Physical Opportunity									
Social Opportunity									

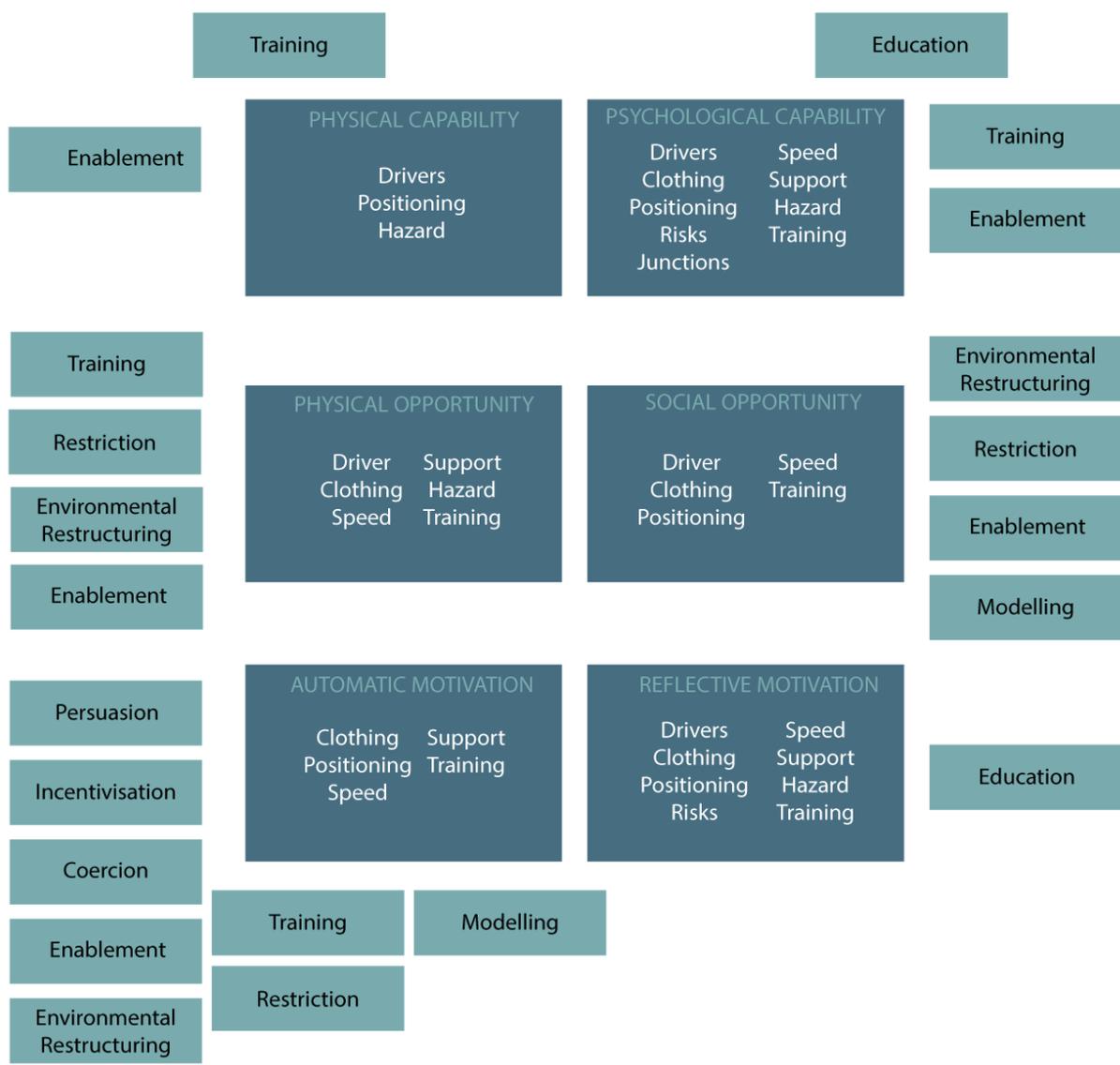
Automatic Motivation									
Reflective Motivation									

The following diagram brings together the intervention functions, the COM-B components and our target behaviours to show where the opportunities to change are. It shows that there are many different ways in which 'automatic motivation' can be influenced and that this can be used to change five of our nine behaviours. Both physical and social opportunity can be addressed through four different intervention functions and that these both address at least five of the nine behaviours.

The diagram also raises some questions about the natural instinct to default to education in road safety behaviour change. Whilst reflective motivation could be the relevant component to address eight of the different behaviours, education itself is only relevant for two of the six COM-B components. It might suggest that in order to change some of these behaviours, education should be used in conjunction with some of the other intervention functions.

This stage of the workshop opened up all of the possible routes for intervention design. The next stage is to refine them.





INTERVENTION DESIGN

Bringing together all of the evidence and data; the behaviours and COM-B components; and an understanding of which intervention functions might be most effective to target the prioritised behaviours, the final session of the Double Diamond started to explore what could be achieved.

It was decided that there were two main routes to effect change amongst young riders: through engagement with them and through engagement with their support structures.

SUPPORT STRUCTURES

The process identified that there were a number of ways in which support structures (such as employers, educational establishments and parents) could help to address the target behaviours (through target behaviour 7: Work with support structures to tackle some of the other seven priorities (support)):



:

2. Encourage appropriate clothing to be worn, to improve both protection and visibility (clothing)
3. Improve rider positioning, particularly at junctions (positioning)
4. Improve rider understanding of their risk and the need to mitigate it (risks)
5. Reduce risk at junctions (junctions)
6. Improve speed choices, especially at junctions (speed)
8. Improve hazard perception skills of young riders (hazard)
9. Improve young rider attitudes towards training and the quality of available courses (training)

There were a number of intervention functions that were thought to be most appropriate to work with support structures:

- Persuasion
- Incentivisation
- Modelling
- Enablement
- Coercion

For employers, there were a few different routes to supporting their young riders. They could be incentivised to support safer practice amongst their employees through the provision of appropriate clothing (and storage for it) as well as insurance and enhanced training. They could be encouraged to enable change through the use of workforce management tools. Employers could be coerced through Health and Safety regulation and monitoring or through enforcement of insurance checks. Modelling, through schemes like Driving for Better Business (DfBB), could show them how supporting their young riders could help them to reduce costs.

In educational establishments, it was felt necessary to identify and persuade the 'right person' to participate in supporting young riders. Educational organisations could be enabled to support through travel planning schemes, reduced parking congestion and permit schemes. There could be incentivisation initiatives such as 'Wheels to College', which would provide training, a permit scheme, equipment, clothing and free maintenance. Modelling could be undertaken through a lead institution who sets an example to others.

There were several ways to work with parents to encourage them to support their young riders. Enablement could be used to provide an understanding of what is required to keep their children safe, in terms of training, licensing and protective kit. Modelling could be used here as well through the use of parent advocates (using channels such as 'Mums Net') to provide good examples. It could be stressed that 'better bikers make better drivers'. Enablement could also incorporate the use of parental contracts, where there is an agreement between parent and rider about the use of their motorcycle, based on time, destination and behaviour. Incentivisation could also be used, such as 'cashbacks' and insurance discounts. As parents will be financially supporting young riders and that the Mosaic analysis showed that many are from deprived communities, cost reductions could be key.

Combining these support structures, it was felt that the greatest traction could be gained through focusing on educational establishments, with a parental element. At the point of starting college, it could provide parents with support information. Permits, linked to minimum requirements of training and equipment, could be provided for cars and bikes. This could be linked to travel planning support



from local authorities. A Wheels to College scheme would be a strong mechanism for ensuring training was undertaken and appropriate equipment used. There could be opportunities for retailer involvement and using 'shiny things' to incentivise student participation.

YOUNG RIDERS

The process identified that there were two main activities that young riders could undertake that would reduce their risk. These were:

- To encourage them to undergo training, addressing the following target behaviours:
 7. Encourage appropriate clothing to be worn, to improve both protection and visibility (clothing)
 8. Improve rider positioning, particularly at junctions (positioning)
 9. Improve rider understanding of their risk and the need to mitigate it (risks)
 10. Reduce risk at junctions (junctions)
 11. Improve speed choices, especially at junctions (speed)
 12. Work with support structures (such as employers, education establishments, parents and peers) to tackle some of the other eight priorities (support)
 13. Improve hazard perception skills of young riders (hazard)
 14. Improve young rider attitudes towards training and the quality of available courses (training)
- To encourage them to wear appropriate clothing, addressing the following target behaviours:
 2. Encourage appropriate clothing to be worn, to improve both protection and visibility (clothing)
 7. Work with support structures (such as employers, education establishments, parents and peers) to tackle some of the other eight priorities (support)

There were a number of intervention functions that were thought to be most appropriate to address these two behaviours:

- Education
- Persuasion
- Incentivisation
- Modelling
- Enablement

It was felt that social norms should be a key part of any intervention and that a credible source should be used to share information and influence these social norms. There was scope to provide freebies or incentivise them to attend (either the interventions or focus groups, discussed below). The sessions would allow them to talk through the behaviours in open discussions with peers who are both riders and non-riders (to understand the influences of those outside of motorcycling). The purpose would be to discuss the key issues of training and clothing and offer each other advice. There would be a requirement to maintain informality and use the social status of participants and external 'others' to influence thinking.

The Double Diamond process identified some major gaps in knowledge regarding the target behaviours:

- What are the current levels of protective clothing wearing and training uptake?
- What would get young riders to turn up to an intervention?
- What would get young riders to change and start wearing clothing and undergo training?



It suggests that there is some work to be undertaken to answer these questions and that focus groups might be an appropriate way to do that. There is a question about how to get them to turn up and participate in a focus group, and incentivisation may play a part here.

FEEDBACK ON APPROACH

Of the 10 participants, seven had provided comprehensive feedback on the approach by the time of writing (27/03/18). As this was a novel approach to understanding a road safety user problem and working through how it could be addressed, it was important to capture the thoughts of participants on the process itself.

Expectations of what the two days would involve differed. Many of the participants reported that it evolved as expected and these were individuals who were more familiar with the concept of the Behaviour Change Wheel. For others, the process was very different to what they expected:

“I expected to arrive and discuss options we have tried for years and look for new approaches to these ideas.” Did your expectations differ from reality? “Yes, it was a totally different way of problem solving without jumping ahead at each stage.”

What did you expect to happen on a two-day workshop about young riders? *“A lot of talk but no real conclusions to a ‘problem’ that’s resisted all efforts to resolve in the past.” Did your expectations differ from reality? “No ‘golden bullet’ but a promise that new ideas can be followed. Hopefully a realistic view that might lead to new approaches.”*

Getting domain experts in the same room for two days to work through the issues facing young riders was thought to be a good idea:

“Yes, the fact that you had well informed people with knowledge of different aspects of the issue worked well. It helped stress-test any ideas quickly and efficiently, so that any ideas with consensus should have a good chance of working.”

“I think it was invaluable to have everyone in a room and the structure of breaking off then coming back together and breaking off again worked well. I think two days proved to be ambitious for a target audience that has always proved challenging to develop interventions for and the breadth of the issue. However, I think the process was really good (and challenging). The most important part being that they process was started with no preconceived ideas of what the end point would look like. There was temptation throughout to ‘jump ahead’ to solutions but it was testament to the people in the room that the process was followed as religiously as it was. With a less disciplined and committed group I think this would have been very challenging!”

“As with so many road safety interventions, many practitioners believe they are an expert. What was great about this was the spread of expertise and experience around the room with everyone happy to contribute positively.”

“I think the idea of bringing individuals described as ‘domain experts’ into a workshop was a good idea and the benefit was enhanced by having a younger male colleague involved too. Occasionally, experts can have quite fixed mindsets so having a younger colleague involved was great as a calibration mechanism and indeed, the workshop environment created by the COM-B and Double Diamond methodology was disruptive to fixed mindsets, so it kept the group in an open-minded space that limited scope to jump to conclusions. I’d love to know how the exercise would run if we had more young riders involved and a broader mix of stakeholders



from the wider 'system'. The system being key stakeholders including practicing trainers of different backgrounds, the DVSA, DfT, insurers.... A mix of perspectives and interests, which might draw out some of the more fundamental limiting factors within the system as a whole, including dilemmas, assumptions etc."

Aside from the individuals in the quote above, it was generally felt that it would have been useful to have at least one young rider involved (rather than a young person who doesn't motorcycle) and other suggestions for people who could have been involved were:

- Trauma surgeon
- Youth engagement experts
- Behavioural psychologist

Participants were asked whether they thought the Double Diamond process in general was a useful one and a common theme emerged about not being specific enough about defining one behaviour. This should be considered in future Double Diamond workshops:

"I think the group thoroughly tested the process and hopefully this provided useful feedback for some minor refinements to what was a very useful framework. For the most part it worked well, but I feel we were struggling to find focus on the second afternoon because the behaviour-problem hadn't been defined specifically enough at the end of day 1...I think the focus on one very specific behaviour is the only thing we really lacked."

"I think the double diamond process is very useful, and particularly like the way it was dovetailed with the behaviour change wheel process. I think where we fell down though is that we tried to carry too many 'defined problems' through to the second diamond. I think this is partly down to the complexity of the issue related to young drivers and it would be interesting to apply exactly the same process, in the same format to a simpler issue."

"It kept us focused and prevented the group from disappearing off into the usual arguments and stalemate."

All participants agreed that it was really important to spend the first part of the workshop reviewing the data, so all understood the problem fully. One suggestion to streamline this part of the process was that a smaller group of specialist data and research participants undertook to synthesise the evidence and literature prior to the workshop and then present it back in the first session with an opportunity for other participants to challenge and discuss the findings.

Participants were asked about how useful they thought the Behaviour Change Wheel process and the COM-B model were as the middle sections of the Double Diamond. It was found to be useful, but some participants felt that it would have been useful to have prior knowledge of the process, as time was lost in 'training'. It was also thought that other models could be considered or that the reason for picking the BCW should have been clearly demonstrated.

"The COM-B section was a little... clunky? Again, I can see the value in the outcome but wonder if there might have been a slightly more efficient way to get there."

"I do think the process was useful, yes. The fact they we were experimenting made it even more valuable as we had to adapt our understanding as we went, and this aided joint exploration and dialogue. We knew it was an experiment in applying the methodology to the subject area. At certain points there was some confusion and questions about how best to



align the method with the content of the issue, but this really only served to get us all thinking a little more and refining our own understanding of the problem space.”

The process wasn't completed in full, because of lack of time. Participants were asked what could have been changed in order to give more time to the final part of the Double Diamond. It was suggested that focusing on one very specific behaviour would have provided more time and made the process easier. Others felt that three days were required as concentrating on timekeeping would have meant affecting lots of useful discussions.

“Add another day :) But also as said above do a comprehensive evidence review as prep and maybe ensure people understand the importance of reviewing this individually to have a short discussion at the beginning around the evidence rather than half a day on it at the beginning.”

Regardless of this, all respondents felt that the process was useful and that there shouldn't be a focus on the time taken to complete it.

“I don't feel that any of session time was wasted. I appreciate that time is precious, but to get the correct result it would be worth more time spent even one more day would have made a real difference. With notice this could be planned in.”

Participants were asked what they had learnt over the two days, if anything:

- How the Double Diamond process works
- Other young rider interventions used in other areas
- Retail insight
- How some interventions are perceived by young people
- Different ways of looking at problems
- Challenges of putting these processes into practice
- The importance of different roles for road safety practitioners (design and delivery are different)
- There is no magic bullet
- Traditional approaches may have some relevance but are limited in effect
- Hope that workable new approaches may just be around the corner
- There's a great deal of expertise out there
- The complexity of interdependencies associated with the core issue of young rider vulnerability in a road safety context

Participants were asked what they would change about the process that was followed. Suggestions included a clearer focus on one specific behaviour; a less complex topic to try again to see if the same or different challenges occur; gathering the opinions of young motorcyclists to keep the group focused; some background work to draw out which specific problems existing interventions are seeking to address; and more of an understanding that this particular user group is less of a defined group than others.

Participants were asked what they felt worked about the process:

“I liked how we could explore a few tangents but not waste loads of time getting side tracked from the agenda. The double diamond worked well because it allowed us to explore a range of ideas without losing focus in the long run.”



“The fact it was a clearly defined process. Not everyone’s cup of tea I know, but it really served to ensure we didn’t jump ahead to solutions and you could see the purpose for each step along the way.”

“The willingness of the delegates to share experiences and expertise.”

“The Double Diamond process kept us focussed on a conclusion. It could easily have become just another talking shop. I feel something was achieved here.... just not quite sure what yet. :)”

“The venue worked, the size of the group was about right I think but could work with a few more participants I feel. The process is quite clear and rigid, it is just the subject that tested the boundaries of the process. It worked because we had a strong well facilitated dialogic process of communication.”

“Being able to focus on specific behavioural issues was useful, weeding out the unnecessary stuff to focus on the real problem is invaluable.”

“It took us away from just following the things we have tried for year that clearly are not working. I am now looking to different interventions and approaches.”

Finally, participants were asked if the same process could be replicated in other regions and for other topics and if so, what should be taken into account before replicating it elsewhere. It was felt that it could be replicated if the following were adopted:

- Right mix of people/expertise and research/design/delivery
- Good information resources prepared in advance/available evidence base for topic
- Two-day format to allow offline chats
- Focus on one clearly defined issue
- Think about the complexity of the issue
- Include representatives from the ‘problem group’
- Better established user groups

It was also suggested that this group should finish the process and review all the work again together. This takes the feedback onto the next steps and actions.

NEXT STEPS AND ACTIONS

There are a number of actions to be taken as the next steps in this process:

- Undertake focus groups to answer some of the key questions about current behaviour and what would facilitate engagement by young riders
- Engage with educational establishments to identify those who could operate as a ‘lead’ and trial organisation
- Explore how a Wheels to College scheme could be established, funded and maintained
- Design pilot interventions with young riders and support structures
- Identify and code behaviour change techniques in the pilot interventions
- Undergo evaluation training and design appropriate evaluations for the pilots
- Link this work across to the existing Compulsory Basic Training (CBT) pilot that is being conducted in the East. Use the understanding of the behaviour issues and challenges from this workshop to inform the package for an enhanced CBT



- Working with employers through Riding for Better Business as an extension of DfBB and use the learnings from the workshop to inform the development of Riding for Better Business to add value

CONCLUSIONS

This process involved two intense but productive days of working through the identification of the problem through to identification of potential solutions.

The needs analysis meant that we had a clear understanding of who the target audience are and why they might be using a motorcycle. All year-round collision involvement suggests that motorcycles are their main form of transport for college and work and that they need to ride, rather than necessarily wanting to. Economic pressures could influence their access to training and the use of appropriate equipment, reflected in the evidence review where protective clothing, training and improving their visibility, especially at junctions is key. A review of previous interventions found that impact can be limited, and evaluations have not been undertaken. Successful interventions have been peer-led and incorporated engaging activities.

The behavioural insight stage involved the identification of target behaviours, reflecting the needs analysis. The process involved understanding which behaviours were most promising in terms of achieving change, influencing other behaviours and being measurable. There were nine target behaviours identified, ranging from improving road positioning and the wearing of appropriate clothing through to raising awareness amongst drivers and using support structures to influence young rider behaviour.

The behaviour change stage used the Behaviour Change Wheel and COM-B to understand what needs to change and for how for the nine target behaviours. The process identified the intervention functions which could be employed in an intervention.

The final stage of the workshop started to map out two pilot interventions, both using educational establishments, with one targeting young riders and the other working with support structures. It was felt that these were the easiest routes to accessing the target audiences. The proposals were new approaches to interventions, using the data and behavioural diagnoses but involve collecting some information before proceeding.

The next steps, therefore, are to collect information on baseline behaviours and understand what would motivate young riders to change. There are a number of exploratory exercises to undertake before commencing design of pilots and evaluations needs to be planned. The first 'next step' is to establish ownership of these actions by the various partners.



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