

Psychiatry in the Service of the Family

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Abstract

Even the wealthiest countries struggle to manage mental health in their populations, so the models they use will be unsuitable for communities developing services from limited infrastructure. However, the prenatal environment and early adverse childhood experiences shape the development of both physical and mental pathology. Half of adult psychiatric disorders originate in childhood, most preceded by under-detected milder disorders, and average population mental health predicts the prevalence of common mental disorders. The family is the child's dominant environment, and good family life improves mental health and well-being in all its members. The family is therefore appropriate for universally targeted interventions. These could reduce the prevalence of common psychiatric disorders by improving the population's average mental health. In addition to such Public Mental Health strategies, the development of secondary care facilities focusing on antenatal, postnatal and parent/child mental health could have community impact significantly beyond that of the individuals the services target.

(149 words)

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Psychiatry in the Service of the Family

Romania is struggling to establish effective community mental health services. With a population of just under 20 million, compared to the United Kingdom's 66 million, Romania has a hospital discharge rate for mental health of more than 1,250 person-years/100,000 compared with the UK's rate of a little more than 250/100,000 (European Union, 2017). This does not seem to translate into better mental health outcomes e.g., suicide rates are higher than average (Marica and Media, 2014), despite equivalent general population well-being to the UK and other prosperous European countries (European Union, 2015). There is also evidence of significant stigma against either reporting of mental health symptoms or seeking help for them. Despite the high rate of psychiatric hospital discharges, Romania has the lowest reported rate of mental health consultation among all European countries (effectively zero), and the very low rates of reported depression do not match its suicide rates (European Union, 2017) or the number of work-days lost per month for anxiety (3.5) mood (4) and alcohol-related (3.6) disorders (eu-WMH, 2011), which are equivalent to countries with much higher reported rates of these disorders.

Simply copying other countries with well-established community services is unlikely to be fruitful. Countries like the Netherlands or the UK have much lower level of stigma, making secondary care community services more acceptable to the communities they serve: there is no point providing a service that will not be used. Their services are large-scale, meaning the incremental cost (the cost of undertaking an additional unit of work) of delivering services are lower, and their staff are used to working in the more informal and less risk-averse settings necessary for effective community provision. In these circumstances a Public Mental Health (PMH) approach can be very helpful. In all human societies, the strongest institution is the

family, and families work to support the health and well-being of their members, until they can no longer do so. Offering mental health skills as a universal service for improving family well-being avoids stigma, as the service is normative, and may work to reduce population prevalence, while at the same time improving mental health knowledge and reducing stigma. There is an increasing body of evidence, discussed below, that these services will have their greatest effects when offered in relation to the puerperium and early years. In the shorter term, this may then make creating community services of all kinds for mental health problems easier, as familiarity and knowledge both reduces stigma and can increase appropriate demand; in the longer term it may reduce the need for more specialized services, which even the richest countries find hard to provide.

The scientific basis of universal interventions

The scientific basis for universal interventions with a focus on the early years is based on three advances: improvements in our understanding the developmental origins of health and disease; the pathway leading from Adverse Childhood Experiences (ACEs) to both physical and mental pathology, and the relationship between the average mental health of the population and that population's prevalence of common psychiatric disorders.

The developmental origins of health and disease

Sometimes known as the "Barker hypothesis", the theory that our early developmental history sets later life trajectories for health and disease also applies to our mental health (Schlotz and Phillips, 2009), leading to the two being inextricably mixed. For example, antenatal depression increases the risk for low birth-weight by 39% (Grote et al., 2010), which predisposes to both chronic physical (Barker, 2012) and mental (Mathewson et al., 2017) ill-health. Consistent with the idea of lifelong mental ill-health, the idea of developmentally specific syndromes has been

replaced with a concept of lifelong patterns of common psychiatric disorder, whose measurement or detection may be moderated by the developmental level of the patient (D Foreman, 2015).

Many of these disorders are now hypothesised to arise from extreme expressions of temperament, which is discussed next.

Temperament.

Nigg (2006) gives an extensive account of how temperamental reactive and incentive-response styles and regulatory processes may arise from elementary neurocognitive processes. As well as eventually evolving into the well-known 5 factor theory of personality extremes in these traits have been found to predict ADHD, depressive disorders, behaviour disorders, anxiety and addictions (Lahey et al., 2017; Nigg et al., 2002). These disorders all have significant genetic components (as does temperament and personality); however, epigenetic processes affect their expression and one of these, DNA methylation, has been extensively implicated in responses to perinatal and early adversity (Conradt, 2017). For example, in one study antenatal depression produced more DNA methylation of genes of interest, which were associated with higher levels of new-born hypotonia and lethargy, with some worsening of neonatal self-regulation. The “genes of interest” just mentioned are those associated with inflammatory processes (McDade et al., 2017) and these processes in turn predispose to depression in the next generation (Bakunina et al., 2015).

Changes in gene expression might be difficult to correct, and, consistent with this view, chronic and relapsing disorders such as anxiety have been specifically linked to antipathetic parenting (Schimmenti and Bifulco, 2015), while they have also been shown to predict increased risk for chronic physical impairments (Widom et al., 2012, 2018). Thus, preventing methylation

by mitigating the conditions which predispose to it is inherently preferable to treating the consequences of methylation after it occurs.

Attachment.

Brain imaging studies are steadily transforming our understanding of attachment from an ethological and psychodynamic construct to one of a coordinated set of persisting psychobiological adaptations, coordinated between the mother and her new baby. The brain of a mother reorganises significantly and permanently during her first pregnancy, with thinning of areas associated with Theory of Mind, and the extent of these changes predict both quality of a new mother's attachment, and absence of hostility towards her new baby (Hoekzema et al., 2017). The same study found that father's brains do not reorganise in this way, consistent with other findings that they respond qualitatively differently to their new babies (Swain, 2008). Animal studies of attachment support the view that it facilitates self-regulation by suppressing unhelpful fear-related responses in the presence of an attachment figure (Landers and Sullivan, 2012). The amygdala is of course closely related to fear production, and a recent study of human infants found an association between maternal inflammatory markers during pregnancy, infant amygdala volume, attachment and impulse control at age 2 (Graham et al., 2018), while early life experiences have been associated with maternal ability to develop attachment to their offspring effectively (Barrett and Fleming, 2011). Methylation of inflammation-related genes, leading to increased levels of inflammatory indicators, thus seems to operate as a final common pathway between early stress and the subsequent development of mental health problems.

Adverse Childhood Experiences

ACEs, as well more general environmental stressors have been associated with DNA methylation (McDade et al., 2017; O'Donnell et al., 2018). Consistent with the idea of DNA

methylation and inflammation being a final common pathway for the effects of environmental adversity, it is the number, not the type of ACE which predisposes to the range of physical and mental disorders discussed above (Anda et al., 2006). The original study included 10 ACEs, which may be grouped into two classes: child maltreatment and family discordancy (which latter includes parental mental illness or drug use). Others may also be possible (Mersky et al., 2017), and the high intercorrelations found between them suggests that they may be considered to be indicators of some underlying adversity scale. It is an obvious truism to state that every child begins life with no ACEs, but Anda et. al. (2006) found that keeping the number of ACEs at 4 or below was found to make a significant difference to the likelihood of developing difficulties in later life.

Average levels of mental health difficulty and population prevalence of disorders

The discussion above points out that a very similar final common pathway, DNA methylation, seems to be responsible for linking early adversity, both prenatally and postnatally, to adverse outcomes for both mental health and cardiovascular disease. Consistent with this hypothesis, Rose and Day (1990) observed, for a wide range of continuous variables with pathological extremes related to cardiovascular illness such as blood pressure, but also considering alcohol intake, the mean population levels predicted population prevalences of the relevant disorder (high blood pressure or alcoholism). Psychiatric rating scales can be regarded as measuring the continuous variable(s) associated with psychopathology, and a similar relationship has been found for common psychiatric disorders in childhood (Goodman and Goodman, 2011) and depressive disorders in adulthood (Veerman et al., 2009).

Implications for evaluating universal interventions

From this perspective, universal interventions may be interpreted as trying to reduce the population mean scores for the disorders they are trying to address. Goodman and Goodman (2011) estimated, for the UK population, that a change of 0.6 of a standard deviation in the questionnaire score would produce a 1 unit change in the log-odds prevalence of the psychiatric disorders their questionnaire detects: these are childhood behavioural, emotional and hyperkinetic disorders. If we recall that an effect size may be interpreted as a standardised mean difference between two questionnaire scores, then it becomes possible to estimate the impact a preventative measure will have on the prevalence of a disorder by considering the likely impact on the population mean score.

An extensive review of efficacious primary preventative programmes for children is available (Graeff-Martins et al., 2008) which enables approximate reductions in population prevalence to be estimated from Goodman and Goodman (2011). Sources of prevalence estimates are given in the table.

Table 1: Estimates of reduction in prevalence achievable by preventative interventions

Focus of Interventions	Effect size (95% CI)	Estimated difference in prevalence from → to	Reduction in prevalence [95% prob.]
Substance abuse	.27 (.18-.44)	12% (NHS Digital, 2012) ¹ → 7.3% [9.1%]	39% [24%+]
Anxiety and Depression	.6 (.39-.8)	2.4% (Green et al., 2004) → 0.9% [1.3%]	63% [47%+]
Eating Disorders	.47(.3-.74)	1.4% (Smink et al., 2012) ² → 0.6% [0.85%]	54% [39%+]
Conduct/behaviour problems	.35(.24-.43)	5.9% (Green et al., 2004) → 3.4% [4%]	43% [32%+]
PTSD	.77(.61-.94)	31% (Koenen and	64% [55%+]

¹ From HSCIC (NHS Digital), prevalence for alcohol: other substance abuses seem similar, change likely to be so also

² For girls, including bulimia

Focus of Interventions	Effect size (95% CI)	Estimated difference in prevalence from→to	Reduction in prevalence [95% prob.]
		Widom, 2009) ³ → 11.1% [13.9%]	
Suicide	.4(.06-.68)	3.9/10 ⁵ (Shah et al., 2011) ⁴ → 2.0[3.5]/10 ⁵	49% [9.5%+]
General Health Promotion	.41(.37-.41)	9.6% ³ →5.1% [5.4%]	47% [44%+]

Table 1 above should be treated with caution, as it does not display the results of a formal meta-analysis, and the association between SDQ scale scores and prevalence varies in different cultures (Goodman et al., 2012). Many of the effect sizes have been calculated from pilot projects with varying designs, and such projects tend to overestimate outcomes. The smaller size of the substance abuse effect size, which has been calculated from the largest number of studies, illustrates this risk. However, the overall range is also consistent with published meta-analyses (Durlak and Wells, 1997; Farahmand et al., 2012), though the most recent, focussing on low-income youth, found negligible follow-up effects (though in this study, the effect size at follow-up (0) was not significantly different from the positive post-test effect size (.25)) and stressed the importance of interventions which concentrated on both youth and their context. Using the .25 effect size and treating it as an index of general health promotion, the reduction in prevalence would be to 6.5%, or a 32% fall, even for the hard-to-reach poor urban youth. The major point illustrated in this table is the large reductions in prevalence that could be achieved by preventative interventions with even quite small effect sizes. These numbers are far greater than those which could be achieved by secondary care services, even with the most conservative (95% probability) assumptions.

³ Refers to prevalence in abused populations (target of preventative programmes described)

⁴ Using England and Wales birth rates 15-19y

Developing a strategy for family-centric mental health

Priorities for service delivery

It is clear that physical and mental health are inextricably linked, and that early development, including both the foetal environment and ACEs, affect health outcomes throughout the lifespan. The review above suggests that focusing on the family, as an institution committed to improving the well-being of, especially, its children, is likely to deliver effective preventative services. This structures appropriate priorities for an interventional strategy.

Optimising outcomes for pregnancy

Monitoring trends in birth weight

Its relevance in relation to future mental health e.g., ADHD (Lim et al., 2018) and physical health e.g., cardiovascular disease (Smith et al., 2016) is well recognised, and it is sufficiently sensitive to environment to detect both genetic (Engelbrechtsen et al., 2018) and environmental influences (Harris and Seckl, 2011). As it requires little interpretation it is at low risk of gaming (see on page 18 below) if made a policy focus, and tracking trends as well as cross-sectional comparisons would provide information on the effectiveness of antenatal interventions.

Detection and treatment of antenatal maternal mental and physical ill-health

It is frequently assumed that the impact of mental ill-health on the intrauterine environment must be less than that of physical ill-health. This is not so: the impact of prenatal depression (the commonest antenatal maternal mental illness) on birth weight (Grote et al., 2010) is close to that of smoking (Zheng et al., 2016), which latter is generally accepted to be the most

⁵ HSCIC (NHS Digital)

important cause of low birth weight in the developed world . It is also clear that, at the levels epidemiology predicts, appropriate screening tools will be needed in addition to routine monitoring, as either alone will be insufficient to detect those at risk (Foreman, 2018a). Early detection before depression has had time to intensify may allow treatment by the same primary care workers who detect it, saving referrals to secondary care, if the workers are appropriately trained (Holden et al., 1989), while detection will also allow intervention for any associated potential ACEs identified (Mersky et al., 2017). Such treatment may benefit children already in the family, if the mother is not primiparous (Siegenthaler et al., 2012)

Providing psychological interventions antenatally

It is clear that the antenatal period is one where even hard-to-reach families engage with services, but that engagement drops off precipitously postnatally (Popo et al., 2017). The antenatal period therefore provides the opportunity both to offer beneficial psychological interventions normatively, so that they do not become stigmatised. Large-scale roll-out of preventative programmes, including parenting, has proven effective regarding older children, and benefits parental mental health as well as that of the future siblings (Lindsay et al., 2011; Siegenthaler et al., 2012). while family therapy, as well as individual counselling, has been found to have some effectiveness for perinatal depression (Cluxton-Keller and Bruce, 2018), consistent with the positive effect these studies identified. Even lay staff, with a little training, can make a significant benefit (Kenyon et al., 2012). There is also the opportunity to screen for more severe problems, which may be referred onwards as required.

Prevention of Adverse Childhood Experiences

It follows, from the review above, that preventative services should focus on their reduction. From this perspective, postnatal mental illness of all kinds are ACEs. Their main classes, with appropriate interventions, are considered below

Child maltreatment & parental mental health

Child maltreatment covers no less than 5 of the 10 core ACEs: physical abuse, sexual abuse, physical neglect, emotional neglect and emotional abuse. Of these, physical abuse is the most concentrated in infancy (Sibert et al., 2002), as is fatal neglect (Douglas and Mohn, 2014). UK child protection, judged by fatalities (which are implicitly in the earliest years), is among the most effective in the developed world (Fry and Casey, 2017), so it is appropriate to consider primary (preventing maltreatment) and tertiary (mitigating consequences) prevention as the current priorities. Effective sex education and family planning can offer a significant preventative contribution to physical abuse, as both younger age and unwanted pregnancy are important predictors (Mulpuri et al., 2011), while the prompt, effective management of both antenatal and postnatal parental and sibling mental health, discussed on page 11 above, will protect against both physical abuse and neglect, as well as covering two more core ACEs, substance abuse and parental mental health, if substance abuse is understood (as it should be) as a mental health issue. In the US the Head Start programme, and in the UK, the Sure Start programme, have both been shown to address several areas associated with child maltreatment and parental mental health, as well as improving life satisfaction (National Evaluation of Sure Start (NESS) Team, 2012; Puma et al., 2010).

Domestic violence.

As well as being one of the core ACEs, being a recipient of child maltreatment of any kind increases the chance of engaging in violence inside and outside the home, irrespective of gender (Milaniak and Widom, 2015). So, alongside maltreatment, domestic violence is a key ACE whose reduction should be a policy target, as it may contribute to intergenerational transmission. It correlates strongly with physical abuse, mental health and drug problems, though less so with gaol terms (Mersky et al., 2017). Family discordancy, power imbalances and substance abuse are additional important predictors (Jewkes et al., 2017). With similar predictors and intercorrelation with abuse, it seems likely that similar interventions to those already discussed might be effective, though the evidence for this is currently poor. There is therefore a need to encourage trials of such interventions, so the best interventions can be identified.

Parental imprisonment

Parental imprisonment clearly involves aspects of justice outside its role as an ACE. However, a rare randomised trial of prison versus non-custodial options for domestic violence in the United States found that the victim was more likely to be murdered subsequently if the perpetrator had been previous imprisoned, rather than receiving a non-custodial option (Sherman and Harris, 2015). This suggests that, for domestic violence at least, the correlation found between the two might be bidirectional, justifying the classification of prison as a risk factor in its own right, not simply an indicator.

Divorce

There is a huge literature on this, which is beyond the scope of this paper. However, relationship education can be effective, particularly if given around the transition to parenthood (Arnold and Beelmann, 2018). This does seem to be a potential intervention which could lie

within the capacity of primary care and mental health services, as its principles are implicit in much parenting practice and family therapy.

Other ACEs

As discussed on page 6, Mersky et al (2017) have suggested that the original list of 10 ACEs may be insufficient, and validated six additional ACEs: chronic financial difficulties; food insecurity; homelessness; parental absence; frequent peer victimisation and violent crime victimisation. While their status is uncertain, they fit with the current “ecological risk” model for maltreatment (Evans et al., 2014), and so would make appropriate policy targets for reduction: food insecurity may additionally be an important contributor antenatally (Barker, 2012).

Ensuring secondary care services are sufficient to support improved primary care.

When primary care services are improved, costs to secondary care are expected to diminish. While this is true, the cost improvement comes from improved service quality, which leads to more incisive and efficient treatment: the demand for procedures, and the staff who provide them, is not reduced (Health Foundation (Great Britain), 2011). In UK mental health, there is a large reservoir of unmet need (Cotgrove, 2018; Pathare et al., 2018; Thornicroft et al., 2017) while the introductory discussion identified evidence of, proportionally, a much greater hidden need in Romania. The increased detection of mental health difficulties associated with improved primary care services will increase demands for appropriate secondary care (mostly in the community setting), as well as increase demand for consultation, advice, supervision and training. This newly expressed demand can be used as a means of reducing stigma, as it will arise from the education of families about mental health issues by appropriate and trusted primary care workers, who will then be advocating for them. Families know, and are in contact with other families, who will already know the family members who are struggling. Despite the

large number of gaps in research, it seems likely that this combination of advocacy and education, combined with maintaining social contact in the community, will be effective (Thorncroft et al., 2016). However, the development of primary and secondary care will need to be coordinated, as the demand for more complex solutions from primary care must be met from more expert practitioners. Without this, primary care will not be able to cope, and families will lose trust in services which cannot deliver in complex circumstances.

The economic case and barriers to investment

Economics of early prevention.

The outcome studies quoted on page 7 largely refer to older children. However, Heckman (2008) developed an economic model based on developmental psychopathological findings, which suggested that the benefits of the ratio of early to later intervention in childhood across the lifespan followed a positive curvilinear relationship i.e., early intervention was disproportionately beneficial compared to later. Data collection problems make this model difficult to test, but Knapp and colleagues (Knapp et al., 2011) undertook long-term (6 year or more) economic reviews of fifteen early intervention strategies, with supportive results: for example, they found that early intervention for conduct disorder (which typically has a childhood onset) had a 20% greater return on investment than early detection of psychosis (which typically begins in adolescence), but even early intervention for conduct disorder has only 10% of the return on investment from prevention of conduct disorder through social and emotional learning programmes. Though these latter were evaluated in school, at 10 years, around 74% of conduct disorders are likely to have begun before then (Meltzer et al., 2003), and social education programmes may be successfully adapted for preschool children (Domitrovich et al., 2007). So, it seems likely that the economic benefits of social and emotional learning programmes will be

greater if applied to preschool children. This is also consistent with a recent UK cost-consequences analysis of perinatal depression, which found that, of a total average cost of approximately \$96,000 per case to society, 72% of these costs related to the child, and only 28% to the parent, in a condition which affects around 20% of mothers (Bauer et al., 2014).

Romania's birth-rate is around 18% greater than the UK's, so this represents a proportionately greater burden on a society whose GDP per capita is only around 27% of the UK's (*countryeconomy.com*, 2018). The same study also found that, in the UK, these costs were five times the costs of improving services. This ratio may well be greater in Romania, as the costs of developing community services could be offset against the reduced demand for hospital and institutional care. UK costs are not directly comparable with those of Romania, but within the UK, unit costs for hospital care are between three to four times those of community care for perinatal and child mental health in the financial year 2016-2017.

Thus, there is a general argument for focusing on the perinatal period and early years in Romania, with an emphasis on prevention, which arises from both biological and economic grounds.

Difficulties in making the case for investment in family-centric mental health

The problems related to resource competition have been discussed on page 18, resolving competing funding and priority constraints at on page 18, and political divergence in Table 4, in relation to the need for a consensual approach. A different problem arises when a service provided by one agency benefits another. This can be seen in the following set of tables from Bauer et al (2016).

Table : Costs by agency of perinatal depression for children

Cost of perinatal depression, impact on children (pre-term birth excluded), per case (in 2014/15 prices)

Health and social care	Education	Criminal justice	Health-related quality of life losses	Productivity losses	Other (societal)
£1,894	£3,230	£2,014	£30,771	£5,539	£7,596

Cost of perinatal depression, impact on children (pre-term birth included), per case (in 2014/15 prices)

Health and social care	Education	Criminal justice	Health-related quality of life losses	Productivity losses	Other (societal)
£2,888	£3,230	£2,014	£31,192	£5,560	£7,600

Cost of perinatal psychosis, impact on children, per case in 2014/15 prices

Health and social care	Education	Criminal justice	Health-related quality of life losses	Productivity losses	Other (societal)
£354	£7	-	£4,851	£7	£5

It can be seen that, from a children’s perspective, the child-based costs to be remitted from perinatal psychosis are least, and the greatest costs to agencies from non-psychotic perinatal mental illness lie in the education and criminal justice sectors. As the general governmental drive to reduce costs includes budgetary restriction, its agencies are unlikely to prioritise investments whose economic returns do not support them. This makes the economic case for ring-fencing funding and a separate agency.

Creating family-centric provision

The role of governance, policy and management in delivering family-centric mental health

All parts of government make some contribution to mental health of young children and their families (Rodríguez-Pose and Maslauskaite, 2012), as Table 2 below makes clear

Table 2: Association between economic variables and mental well-being

Individual		Macroeconomic	
Income	Sigmoid curve of happiness Vs income = relative relationship	GDP per capita	Higher is better, with some ceiling
Age	U-curve, drop in teens, uplift from 40s+	Inequality of income	Less is better, though may be tolerated if stimulates growth
Health	Strong +ve relationship	Inflation	Less is better
Education	Strong +ve relationship	Corruption	Less is better

Individual		Macroeconomic	
Employment	Students, pensioners and self-employed happier. Long-term unemployed happier than short-term	Government spending	Overall spend correlates negatively, individual departmental spend (e.g., health) positively
Gender	Women happier	Decentralisation	Less central control is better
Marital status	Married higher (v strong)		
No. Children	Not significant		

Factors affecting policy delivery

Research has identified three major factors which may impair effective policy delivery applicable to provision of family-centric mental health services.

Perverse incentivisation

The hierarchical nature of management implies that all managers not in direct contact with the intended output will be evaluated (and therefore incentivised) in relation to some proxy. Bevan and Hood (2006) demonstrated, for healthcare, that these proxies are affected by gaming, where managers creatively interpret policy to bias these proxies in their favour, irrespective of the effect on the intended outcome. In mental health, matters are complicated by the term “early intervention” having two distinct targets: the early years, and teenagers at risk of continuing mental health impairment (DM Foreman, 2015). In the UK, it has proved difficult for Government to stop these two goals competing for a common pool of resources, even though effective mental health services must address both (DM Foreman, 2016; Foreman, 2018b).

Bounded rationality in policy delivery

“Bounded rationality theory” (Jones, 2003) derives from psychological observations which also informed Tversky and Kahneman’s (1981) classic paper on framing effects: it proposes that, in complex situations (especially involving conditional probabilities) and when under pressure, we rely on some cognitive rules of thumb, which do not provide necessarily accurate results. They are thought to be important in public policy because policy goals are

frequently vague, and the level of contingent detail is too great to be grasped. These processes have been implicated in barriers to the translation of research into routine clinical practice (Rosenheck, 2001), market failure in consumer choice in commercial healthcare (Korobkin, 1999) and the policy debates surrounding high profile failures of expert judgment in child protection (Best et al., 2013). Difficulties in bounded rationality may have contributed the difficulties CAMHS had in meeting the needs of both early years and teenagers when the latter were prioritised in policy: Foreman (2018b) found that services reported closing their preschool facilities through “lack of demand” while recognising that this lack arose from their referral screening policies. Ironically, this approach may have contributed to the current and increasing pressure on UK CAMHS services (Cotgrove, 2018), as pre-school CAMHS services have been in decline since 2006 (DM Foreman, 2016), the sure start prenatal and early years provision since 2009 (Smith et al., 2018), and many of the children affected by this service loss will now be in their teenage years.

The role of the street-level bureaucrat

A street-level bureaucrat is someone who directly engages with individual recipients of the policy the bureaucrat is delivering (May and Winter, 2009), so all front-line employees of the state-managed NHS and Social Care services are street-level bureaucrats. They necessarily have discretion in how policies are implemented, which can transform them (Brodkin, 2011). The progressive withdrawal of CAMHS from early years mental health discussed above on page 18 was undertaken by the local professionals adjusting thresholds to ration resources to the point where service withdrawal made no practical difference at local level. Indeed, the local professionals were unaware of the impact their decisions were having.

Adjusting roles and responsibilities to maximise policy delivery

Hoppe (2017) has provided useful guidance for facilitating effective policy delivery, based on the concept that effective policy structures previously unstructured problems, by combining the best available knowledge with agreement on values, norms and goals. This is considered in terms of the dimensions discussed on page 18.

Eliminating perverse incentivisation

With so many people involved, all of whom are differently incentivised, the most effective way of detecting this is through careful monitoring of appropriate outcome instruments, particularly when, as discussed on page 19, those affected may be unaware of how their behaviour is being shaped. However, to avoid gaming, these outcomes must either be collected independently of the services delivering care, or not also be used as targets against which services are judged, as discussed on page 18. The resolution of this apparent conundrum is discussed on page 22. Perverse incentivisation can also be reduced by ensuring that all incentives are consistent with a common culture, that is rooted in optimising service delivery. This culture can be supported organizationally, by providing appropriate resources for its maintenance (Cohen, 2018). In the UK financial sector, systemic problems of perverse incentives have been directly addressed by its regulator, through instruments such as calls for input and thematic reviews within a regulatory framework that includes an explicit cultural focus (Financial Conduct Authority, 2016) while that of the UK healthcare sector remains fragmented and individualised (Care Quality Commission, 2018), which may be responsible for the failure to detect unintended policy consequences and perverse incentives apparent in UK mental health (DM Foreman, 2015, 2016). Introducing high-level regulation in health and social care settings could materially improve perverse incentives by adopting a similar culture-led approach to

regulation, which drives agents to seek comparability and credibility. For example, in the corporate sector the use of mandatory reporting of metrics relevant to environmental sustainability encouraged companies not so mandated to begin reporting them, which was associated with an increase in corporate value (Ioannou and Serafeim, 2011).

Managing bounded rationality

While structural reform could address perverse incentivisation, if the reform led to strengthening a desired culture, this strengthening is likely to amplify that culture’s framing effects. An additional solution is needed. The concept of “nudges” (Thaler et al., 2010) is a useful acronym to described the process of what they call “choice architecture”, which reformulates circumstances to ensure that framing effects support, rather than interfere with, correct decisions. Table 3 below describes this acronym, with examples relevant to family-centric service provision.

Table 3: Processes for managing complex choices—The “NUDGES” acronym

<i>Domain</i>	<i>Description</i>	<i>Example for family-centric mental health</i>
<i>iNcentivise</i>	Providing an incentive to make the correct decision	Define and ring-fence funding
<i>Understand mappings</i>	The connection between information and values that leads to making a choice	Ensure agreement on priorities irrespective of political and religious divides
<i>Defaults</i>	If no choice is clearly made, the default results	Services delivered out of a specific, dedicated organisation
<i>Give feedback</i>	The outcome of a decision is provided promptly, enabling updating if dissatisfied	Provision of outcomes dashboards available to all stakeholders covering key metrics
<i>Expect error</i>	Mistakes may arise stochastically wherever there is discretion or judgment	Embed quality improvement methodology (e.g., six sigma) in service evaluation as change implemented
<i>Structure complex decisions</i>	Convert complex problem sets into simpler ones through making their relationships explicit	The use of prenatal support and ACE reduction to structure major goals of family-centric mental health

While this approach is normally thought about in relation to applying developed policies to populations, it may also be applied within policy development, as the examples demonstrate.

The rationale for the examples is given in Table 4 below, using UK examples.

Table 4: Rationale for example policy suggestions

<i>Example</i>	<i>Rationale</i>
<i>Ring-fence funding</i>	In the UK, the decline in early years CAMHS services began when ring-fencing ended (DM Foreman, 2016) and more recently other CAMHS services have declined despite the policy intent to increase them (British Medical Association, 2018), with associated funding underspend (Young Minds, 2017). A similar pattern is seen with Health Visitors, the key UK public health practitioners for perinatal and early years mental health, who have declined significantly since funding was transferred to local authority care (Bryar et al., 2017). This contrasts with the expansion in secondary care perinatal services in the same time period, whose funding were ringfenced.
<i>Support across political and religious divides</i>	The UK Sure Start initiative declined, despite evidence for its effectiveness, because its purpose, funding and governance changed under different and multiple political regimes, including Local Authorities (Smith et al., 2018)
<i>Family-centric mental health services delivered by a dedicated agency</i>	This avoids choices being made regarding funding other priorities (Bryar et al., 2017; DM Foreman, 2016). It will also be easier to establish a common set of values that can support appropriate cultures e.g., the “perinatal frame of mind” (McDonald, 2017), to reduce mission drift through unintentionally perverse incentivisation, as discussed on page 20.
<i>Dashboards</i>	Can be used to track both trends (via sparklines) or comparisons (by selection of equivalent areas) providing a focus for convergent working towards a culturally appropriate standard.
<i>Six sigma methodology</i>	Has been shown to improve both efficiency and effectiveness over an extended period in Scotland (Valdmanis et al., 2017)

Engaging street-level bureaucrats

Within the management chain, street-level bureaucrats have most influence on the effective delivery of policy (Ricucci, 2005). There are important differences in how they perceive their own roles, which leads to different patterns of engagement with procedures and policy goals (Petter et al., 2002), so managing this is a key responsibility of local level leadership.

However, two characteristics, availability of necessary resources and job autonomy, were valued irrespective of the pattern of engagement found. Street level bureaucrats make decisions by blending both the goals and the culture of their organisations (Keiser, 2010) and therefore, as mentioned in Table 4, a case can be made for having a national-level agency with its own funding, which can address all these issues appropriately. Such organisations can still sustain significant autonomy, or “discretion”, for their street-level bureaucrats (e.g., Fineman, 1998) and among professionals working like this their discretion is strongly structured by their professional duties (Evans, 2011). So, within an appropriately acculturated agency, simply feeding back dashboard data to the front-line professionals, without using them as performance targets, will strongly incentivise them to improve performance while avoiding the risks of gaming discussed on page 18, particularly if their identification or weakness and their correction is made a target for incentivisation.

Mapping the scope of current provision

Provision for a family-centric psychiatry involves engaging multiple professionals in statutory, voluntary and private sectors, across primary and secondary care. It is surprising how, even in the statutory sector, provision can be ad hoc and patchy. In the UK, a mapping programme comparing local statutory perinatal services to defined national standards (Maternal Mental Health Alliance, 2017) was successful in driving funding to improve the inequalities found. Not only could inequalities be identified, but, as pointed out at below, currently existing services who could support each other might both be identified and put in contact: the latter could be facilitated by a national agency as discussed above. As well as necessary services being absent, what is available can frequently be underestimated and underutilised through lack of

training, awareness and communication between fragmented practitioners and services (Madge et al., 2008).

Delivering services when there is no ideal model

The range of needs of children and their families from pregnancy through the early years is huge, extending from severe prematurity, genetic conditions and neurodisability, though impaired growth and perinatal mental illness to the impact of poor family income, frequently in combination. No single service configuration will address the whole range. However, a centrally managed agency, provided with good data about service configuration as just discussed could operate as a hub, ensuring that the skill-sets available are sufficient and configurable to the needs of the individual child by facilitating connections between relevant services. Successful services also need to take the circumstances of the local community into account, as both evidence and values need to be combined to make a service useful, as opposed to merely potentially effective. Direct central management of this is clearly unwieldy. In the UK this problem faced local services attempting to provide services to children with special educational needs. Legislation was introduced to create a mandated “local offer”, which was a publicly available list of the local services available to families with children in need in their local communities (D Foreman, 2016). Introducing such legislation, while using feedback from mapping to fill gaps in provision, could grow a network of community services across primary and secondary care. The central agency could provide guidance, as well as holding the contracts of at least some of the involved staff, while inspections could support standards of delivery as discussed on page 20. The commitment implied in such a Local Offer would make informal adjustment of thresholds or inappropriate underspend harder to implement.

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