

# 加强肥胖诊治能力建设， 赋能现代化医疗卫生服务体系

## 2024年CDF政策倡议

诺和诺德（中国）制药有限公司  
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### 摘要

随着社会经济的发展，肥胖在全球范围内呈现出广泛流行的趋势。自1975年以来，世界肥胖人数已增长近三倍<sup>1</sup>。到2035年，全球肥胖人数将达到20亿人<sup>2</sup>。中国在过去的40年间也经历了超重和肥胖患病率迅速攀升，预计2030年中国的肥胖人口将超过总人口的20%<sup>3</sup>。

肥胖带来的负面影响涉及居民健康及社会与经济发展等方方面面。肥胖作为独立的慢性疾病及多种慢性非传染性疾病的重大风险因素，在全球范围内带来了日益严峻的影响。2019年，中国超重和肥胖导致的死亡在慢性非传染性疾病相关死亡中占比11.1%，相比1990年的5.7%<sup>4</sup>显著增加。超重和肥胖也会对社会发展带来多重不良影响。超重与肥胖会导致女性生育能力降

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<sup>1</sup> 世界卫生组织，肥胖与超重，<https://www.who.int/zh/news-room/fact-sheets/detail/obesity-and-overweight>

<sup>2</sup> 世界肥胖联盟，《世界肥胖地图2023年版》，<https://www.worldobesity.org/resources/resource-library/world-obesity-atlas-2023>

<sup>3</sup> 王友发,孙明晓,杨月欣,等.中国肥胖预防和控制蓝皮书[M].北京:北京大学医学出版社,2019

<sup>4</sup> B, Xiong Fei Pan A,P.L.W.C,andP.A.P.A."Epidemiology and determinants of obesity in China

低。在 18-35 岁的劳动者中，肥胖患者的工资较体重正常者的工资少 22.4%<sup>5</sup>。同时，肥胖也对全球经济发展带来了不良影响，2020 年超重与肥胖对全球造成的经济影响<sup>6</sup>高达 1.96 万亿美元，对中国造成的经济影响达 2,833.1 亿美元。到 2035 年，超重与肥胖对中国的经济影响将增至 1.27 万亿美元<sup>7</sup>。

在肥胖流行趋势下，中国政府采取了一系列的防控措施，并取得了的相应进展。在宏观战略高度上，国家将肥胖防控视为保障居民生命健康的重要环节。在实施方案上，国家从肥胖判定标准、干预举措和专家共识指南多个方面，出台了指导性文件，并开展了肥胖监测和研究，为肥胖防治提供可靠依据。同时，有关部门与学会协会也在保障措施方面进行了探索。

然而，中国当前的肥胖应对措施仍存在“防大于治”、“体系化诊疗能力不足”的问题。在国家健康战略规划中，肥胖尚未被作为独立的疾病看待，缺少相应的专项防治行动。从实施方案来看，肥胖诊治信息较为碎片化，缺乏系统化诊治政策方案。资源投入和专业人才不足、支付保障体系缺乏和群众的疾病认知有限等问题也阻碍了中国肥胖诊疗能力的建设。

综上所述，加强肥胖诊治能力建设，对于赋能我国现代化医疗卫生服务体系意义重大。本报告参考海外肥胖诊治先进经验，结合中国当前发展实际，建议从以下三个方面入手，加强中国肥胖诊治能力建设：

## 1. 宏观战略

**建议将肥胖作为独立的疾病，开展肥胖防治专项行动。**将肥胖作为独立的慢性疾病列入后续的《健康中国行动计划》和《中国防治慢性病中长期规

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<sup>5</sup> 湖南大学经济管理研究中心，《肥胖对中国劳动者工资的影响研究》，<https://www.sinoss.net/c/2022-04-15/622084.shtml>

<sup>6</sup> 此处的经济影响包括：治疗肥胖的直接医疗支出及肥胖带来的后果（如果旷工、工时生产力降低等）对经济生产力的影响

<sup>7</sup> Social and Economic Consequences of Overweight in Adolescence and Young Adulthood. <https://www.nejm.org/doi/full/10.1056/nejm199309303291406>

划》中。同时，设立健康中国肥胖防治委员会，统筹部署全国肥胖防治专项行动。

## **2. 实施方案**

一是设立肥胖临床诊疗专业学会，引领行业规范和学科发展。学会由具备行业影响力和权威的专家组成，开展前沿临床研究和肥胖诊治相关实践。

二是由专业学会主导、政府背书，形成权威的肥胖诊治指南。结合最新的研究数据与实践经验，整合现有指南与专家共识，提供可操作的专业指引。

三是在政府主导下，成立医疗专家委员会，构建规范化肥胖临床诊疗路径。通过形成标准临床路径，为多学科肥胖管理模式地开展提供标准化参考。

四是鼓励建立多类型的国家级跨学科肥胖门诊或诊疗中心。以国家内分泌代谢病医学中心及国家内分泌代谢病区域医疗中心的建设为契机，鼓励三级医院建立多种形式的国家级跨学科肥胖门诊或诊疗中心。

五是构建国家-省-地市-县四级肥胖分级诊疗网络。建立从国家到基层医疗机构一体化的肥胖防治服务体系，为肥胖患者提供更科学全面的诊疗与管理服务。

## **3. 保障措施**

一是加强肥胖诊治能力建设资金投入和资源保障。

二是加强肥胖诊治相关教育，完善肥胖诊治人员培养体系。

三是建设与肥胖诊治配套的多层次医疗保障体系。

四是加强患者对肥胖的认知，提升肥胖科普与就医信息权威性和普及度。

加强肥胖诊治能力建设需要社会各界的共同努力携手合作。诺和诺德作为全球领先的生物制药公司，专注于糖尿病和肥胖症等严重慢性疾病的预防和治疗，我们希望未来继续加深与中国政府的合作，持续分享肥胖症诊治国际

经验并为相关公共合作项目提供支持，为健康中国 2030 战略目标的实现贡献力量。

## 一、倡议背景

### （一）肥胖流行趋势

随着社会经济的发展，肥胖在全球范围内广泛流行，近年来已成为重要的医疗与社会议题。

#### 1. 全球肥胖流行趋势

根据世界卫生组织(WHO)的定义<sup>8</sup>，肥胖是一种可损害健康的异常或过量脂肪累积，当前国际上主要采用的肥胖测量与定义方法为身体质量指数<sup>9</sup>（BMI）。

1975 年以来，世界肥胖人数已增长近三倍<sup>1</sup>。世界肥胖联盟（WOF）发布的《世界肥胖地图（2023 年版）》显示，在全球年龄>5 岁的人群中，肥胖率将由 2020 年的 14% 上升至 2035 年的 24%，人数将达到近 20 亿<sup>2</sup>。其中，儿童青少年肥胖率在所有年龄段中上升最快。

#### 2. 中国肥胖流行趋势

依据中国与欧美人群体质差异，中国肥胖工作组（WGOC）<sup>10</sup>设定了适用于中国人群的超重和肥胖标准：对于成年人， $24\text{kg/m}^2 \leq \text{BMI} < 28\text{kg/m}^2$  时为超重， $\text{BMI} \geq 28\text{kg/m}^2$  时为肥胖。2018 年，我国成年居民超重率为 34.3%，肥胖率为 16.4%，6-17 岁的儿童青少年肥胖率达 7.9%，6 岁以下的儿童肥胖率为 3.6%<sup>11</sup>。到 2030 年，中国的肥胖患病率将达到近 20%<sup>3</sup>。

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<sup>8</sup> 世界卫生组织，肥胖与超重，<https://www.who.int/zh/news-room/fact-sheets/detail/obesity-and-overweight>

<sup>9</sup> 身体质量指数（BMI）是身高别体重的简便指数，通常用于对成人进行超重和肥胖分类。其定义为按公斤计算的体重除以按米计算的身高的平方（ $\text{kg/m}^2$ ）。根据世界卫生组织对于成年人肥胖和超重的定义， $\text{BMI} \geq 25$  时视为超重， $\text{BMI} \geq 30$  时视为肥胖。对 5 岁以下儿童，超重为身高别体重大于世卫组织儿童生长标准中位数的 2 个标准差，肥胖为身高别体重大于世卫组织儿童生长标准中位数的 3 个标准差。

<sup>10</sup> 指世界肥胖联盟（WOF）研究工作组中，针对中国肥胖流行情况进行研究和数据披露的小组

<sup>11</sup> 国家卫生健康委员会.中国居民营养与慢性病状况报告（2020 年）.人民卫生出版社，2020

## （二）肥胖流行影响分析

肥胖在全球范围成为重大公共卫生问题，加强肥胖诊治体系与能力建设已成为赋能现代化医疗卫生体系升级的重要举措之一。

### 1. 全球影响

观全球，肥胖的广泛流行带来了严重的疾病、经济及社会负担，引起了国际社会的广泛重视。

#### （1）疾病负担

在全球肥胖广泛流行的趋势下，肥胖所带来的疾病负担日益严峻。肥胖是 II 型糖尿病、心血管疾病、呼吸系统疾病、多种癌症<sup>12</sup>和抑郁症等慢性非传染性疾病的重大风险因素，同时还是致死人数最多的代谢性疾病<sup>13</sup>。2019 年，全球由肥胖导致的死亡人数高达 500 万人<sup>13</sup>。

#### （2）社会负担

超重和肥胖会对居民社会生活带来负面影响。英国一项研究表明根据严重程度差异，肥胖对预期寿命的减少在 3 到 10 年不等<sup>14</sup>。同时，肥胖对家庭生活产生了多方面的不良影响。英国一为期 7 年的研究发现，与健康人群相比，女性超重人群在校时间减少 0.3 年、结婚几率降低 20%、家庭年均收入减少 6710 美元、陷入贫困的可能性增加 10%<sup>15</sup>。

#### （3）经济负担

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<sup>12</sup> 根据世界卫生组织阐述，相关癌症包含子宫内膜、乳腺、卵巢、前列腺、肝脏、胆囊、肾脏和结肠癌

<sup>13</sup> Nicholas W.S. Chew, Cheng Han Ng, Darren Jun Hao Tan, et al, The global burden of metabolic disease: Data from 2000 to 2019, Cell Metabolism, <https://www.sciencedirect.com/science/article/pii/S1550413123000396>

<sup>14</sup> NHS Information Centre (2010). <https://www.nhs.uk/conditions/obesity/>

<sup>15</sup> Social and Economic Consequences of Overweight in Adolescence and Young Adulthood. <https://www.nejm.org/doi/full/10.1056/nejm199309303291406>

肥胖及其相关疾病也对全球经济发展造成了负面影响。《世界肥胖地图》显示<sup>7</sup>，2020年超重与肥胖对全球造成的相关经济影响高达1.96万亿美元<sup>16</sup>，占全球总GDP的2.4%。依照当前趋势，世界肥胖联盟预计到2035年超重与肥胖导致的全球相关经济影响将增至4.32万亿美元，占全球总GDP的比例将提升至2.9%。

## 2. 中国影响

看中国，随着经济与社会发展对居民生活方式造成的改变，超重和肥胖人口迅速增加，对国民健康和社会经济产生了重要影响。

### (1) 疾病负担

超重和肥胖作为中国主要慢性非传染性疾病的既定危险因素，与癌症、心血管疾病、糖尿病等200多种疾病有关。疾病带来的影响及其治疗过程可能加重肥胖，形成恶性循环。超重和肥胖2019年导致的死亡在慢性非传染性疾病相关死亡中占比11.1%，相比1990年的5.7%显著增加<sup>4</sup>。

### (2) 社会负担

肥胖在中国的广泛流行对社会发展造成了不可忽视的危害。我国育龄期女性肥胖率呈逐年上升趋势，肥胖会使其发生内分泌及代谢紊乱，降低生育力<sup>17</sup>。肥胖也会影响男性生育力，相关文献显示男性体重指数与精子浓度和精子总数呈负相关关系<sup>18</sup>。肥胖同时导致了事业发展阶段的年轻人就业难度增加，并受到工资歧视。研究表明，在18-35岁的劳动者中，肥胖患者较体

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<sup>16</sup> 此处货币价值单位参考2019年美金标准

<sup>17</sup> 刘玉凤,马玉燕,肥胖患者孕前评估及妊娠期管理,实用妇产科杂志

<https://kns.cnki.net/kcms2/article/abstract?v=sSXGfc3NEDKFC8wBewquiq1tGkHs31B7FX3PA7hkUn-K28aNN3Nzofj5KoNVFZaWM7bZJyZ6tORH-sc2koXebUPfU8MtyQLVxvXX7CqQRQHW4QUMFiiraZovWGGRjaLY-dJ-16ejyhXcoG4JP8QQIw==&uniplatform=NZKPT&language=CHS>

<sup>18</sup>Nathalie Sermondade. Obesity and Increased Risk for Oligozoospermia and Azoospermia. <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/1108774>

重正常者的工资少 22.4%，当 BMI 超过肥胖标准 1 个单位时，时薪会减少 2.1%<sup>5</sup>。

### （3）经济负担

《世界肥胖地图》<sup>2</sup>显示，2020 年超重与肥胖对中国造成的经济影响达 2,833.1 亿美元，到 2035 年，超重与肥胖造成的经济影响将增至 1.27 万亿美元<sup>7</sup>。据统计，中国 2000-2009 年超重和肥胖相关的医疗支出约为 243.5 亿元人民币/年<sup>19</sup>，超重和肥胖的经济负担到 2030 年将达到 4,180 亿元人民币，约占全国医疗费用总额的 22%<sup>20</sup>。

综上，为应对当前肥胖患病现状和未来流行趋势，减少肥胖带来的疾病、社会与经济负担，肥胖管理已经成为公共卫生策略的重要组成部分。

## （三）中国肥胖应对现状

### 1. 中国肥胖防控工作成果

在肥胖流行趋势下，中国对肥胖逐渐重视，采取了一系列的防控措施，并取得了相应的进展。

#### （1）宏观战略

宏观战略上，国家将肥胖防控视为保障居民生命健康的重要环节。2017 年《关于印发“十三五”卫生与健康规划的通知》<sup>21</sup>在慢性病综合防控一节中提出逐步开展超重肥胖等慢性病高危人群的患病风险评估和干预指导。2019

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<sup>19</sup>Qin X, Pan J. The Medical Cost Attributable to Obesity and Overweight in China: Estimation Based on Longitudinal Surveys. *Health Econ*. 2016 Oct; 25(10):1291-311.

<sup>20</sup>Wang Y, Zhao L, Gao L, et al. Health policy and public health implications of obesity in China [J]. *Lancet Diabetes Endocrinol*, 2021, 9(7):446-461.

<sup>21</sup> 国务院，《关于印发“十三五”卫生与健康规划的通知》，[https://www.gov.cn/zhengce/content/2017-01/10/content\\_5158488.htm?trs=1](https://www.gov.cn/zhengce/content/2017-01/10/content_5158488.htm?trs=1)



年的《健康中国行动（2019—2030年）》<sup>22</sup>在膳食管理、全民健身、妇幼中小学健康、疾病管理等方面提及了超重与肥胖人群的干预，同时将相关公共宣传项目列入健康中国行动 2022-2023 年度重点工作。2022 年，《“十四五”国民健康规划》<sup>23</sup>进一步强调了儿童青少年肥胖诊断和干预的重要性，明确了肥胖干预重点人群。

## （2）实施方案

国家从肥胖判定标准、干预举措、防治专家共识指南和疾病监测与研究等多个维度，出台了指导性文件。

判定标准方面，国家卫健委印发了《成人体重判定标准》<sup>24</sup>、《学龄儿童青少年超重与肥胖筛查》<sup>25</sup>、《7 岁以下儿童生长标准》<sup>26</sup>等文件，明确规范各年龄组人群超重、肥胖的诊断标准。

干预措施方面，以儿童青少年为主要切入人群，生活方式干预为主要手段。《儿童青少年肥胖防控实施方案》<sup>27</sup>明确了儿童青少年的超重肥胖防控目标，强化了家庭、学校、医疗卫生机构和政府在肥胖防治工作中的不同责任。《婴幼儿喂养健康教育核心信息》<sup>28</sup>和《健康儿童行动计划》<sup>29</sup>从科学

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<sup>22</sup> 健康中国行动推进委员会，《健康中国行动 2019-2030》，<http://www.nhc.gov.cn/cms-search/xxgk/getManuscriptXxgk.htm?id=e9275fb95d5b4295be8308415d4cd1b2>

<sup>23</sup> 国务院办公厅，关于印发“十四五”国民健康规划的通知，[https://www.gov.cn/zhengce/content/2022-05/20/content\\_5691424.htm](https://www.gov.cn/zhengce/content/2022-05/20/content_5691424.htm)

<sup>24</sup> 国家卫生健康委员会，《成人体重判定标准》，<http://www.nhc.gov.cn/wjw/yingyang/201308/a233d450fdb47c5ad4f08b7e394d1e8.shtml>

<sup>25</sup> 国家卫生健康委员会，《学龄儿童青少年超重与肥胖筛查》，<http://www.nhc.gov.cn/wjw/pqt/201803/a7962d1ac01647b9837110bfd2d69b26.shtml>

<sup>26</sup> 国家卫生健康委员会，《7 岁以下儿童生长标准》，<http://www.nhc.gov.cn/wjw/fyjk/202211/16d8b049fdf547978a910911c19bf389.shtml>

<sup>27</sup> 教育部、市场监管总局、体育总局、共青团中央、全国妇联，关于印发儿童青少年肥胖防控实施方案的通知. 国卫办疾控发〔2020〕16 号，[https://www.gov.cn/zhengce/zhengceku/2020-10/24/content\\_5553848.htm?eqid=da14706b0002496f00000005645d970f](https://www.gov.cn/zhengce/zhengceku/2020-10/24/content_5553848.htm?eqid=da14706b0002496f00000005645d970f)

<sup>28</sup> 国家卫生健康委员会，关于印发婴幼儿喂养健康教育核心信息的通知 [https://www.gov.cn/zhengce/zhengceku/2020-08/01/content\\_5531915.htm](https://www.gov.cn/zhengce/zhengceku/2020-08/01/content_5531915.htm)

<sup>29</sup> 国家健康委员会，关于印发健康儿童行动提升计划（2021—2025 年）的通知 [https://www.gov.cn/zhengce/zhengceku/2021-11/05/content\\_5649019.htm](https://www.gov.cn/zhengce/zhengceku/2021-11/05/content_5649019.htm)

喂养和运动指导方面提出具体措施，旨在降低婴幼儿在儿童青少年及成人期发生肥胖的风险。

专家共识方面，国家卫生部疾病预防控制局于 2003 年发布了第一部成人肥胖综合防治指南。随后，各学会协会分别在膳食营养、儿童肥胖、减重外科、合并症、肥胖综合管理等领域发布相关文件。截至目前共有二十余部可查的指南和专家共识，为业界提供了超重与肥胖预防、控制科学的指导和技术规范。

疾病监测与研究方面，中国疾病预防控制中心在 2004 年至 2018 年间牵头开展了超重肥胖动态监测工作。基于监测成果的研究<sup>30</sup>发现了肥胖率在性别、地理区域和社会经济地位三个因素的影响下的不同变化趋势，为有针对性地优化防控策略、科学评价防控效果提供了可靠依据。

## 2. 中国肥胖诊治体系建设不足

尽管国家已开展诸多肥胖预防与生活方式干预行动，当前应对措施仍存在“防大于治”、“体系化诊疗能力不足”等问题，相关国际实践经验可供参考。

### (1) 宏观战略

国家健康战略规划中，肥胖尚未作为独立的疾病，缺乏防治专项行动。当前肥胖相关战略普遍与其他慢性病防治、青少年儿童健康、居民饮食管理和健身运动等融合叙述。超重和肥胖虽已被纳入国民健康规划，然而当前政策方向仍然是“防大于治”。参考国际肥胖防治实践，WHO 于 2022 年及 2023 年相继发布了《支持成员国实施肥胖全生命周期预防和管理建议的加速计划》

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<sup>30</sup> Body-mass index and obesity in urban and rural China: findings from consecutive nationally representative surveys during 2004–18

<sup>31</sup>和《肥胖预防与管理医疗服务框架》<sup>32</sup>，倡导各成员国系统性制定肥胖防治策略与实施框架。澳大利亚医学协会将肥胖列为一种疾病，并于 2022 年发布国家十年肥胖防治战略规划<sup>33</sup>，旨在指导全社会对肥胖进行提早干预与改善。

## （2）实施方案

尽管国家发布的居民健康相关政策中在实施层面对于肥胖诊治有所提及，当前仍然亟待形成针对肥胖的系统性诊疗规划与指引。

一是**肥胖诊疗专业学会缺失**。中国当前尚未形专门针对肥胖、能在全中国范围为肥胖防治提供指导的专业学会。现存相关学会多为地方性学会或综合学会分会，如北京医师协会减重与代谢专科医师分会。在日本，肥胖专门学会包括日本肥胖研究学会（JASSO）和日本肥胖治疗学会（JSTO）<sup>34</sup>，在肥胖监测、治疗、生活习惯改善和肥胖医学继续教育等方面为社会各界提供指导。

二是**缺乏权威的肥胖诊疗指南**。官方发布的文件<sup>35</sup>目前仅涵盖成人与青少年肥胖防控，缺乏肥胖诊疗方面权威指南。英国国家卫生与临床优化研究所（NICE）于 2022 年发布的《肥胖：鉴别、评估与管理临床指南》<sup>36</sup>是英国目前最新最全面的肥胖诊疗官方指南。该指南为医疗机构、从业者和政策

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<sup>31</sup> Follow-up to the political declaration of the third high-level meeting of the General Assembly on the prevention and control of non-communicable diseases. Geneva: World Health Organization. 27 April 2023.

<sup>32</sup> Health service delivery framework for prevention and management of obesity. Geneva: World Health Organization. 2023.

<sup>33</sup> National Obesity Strategy 2022–2032 . Australia Government, Department of Health and Aged Care. <https://www.health.gov.au/resources/publications/national-obesity-strategy-2022-2032?language=en>

<sup>34</sup> Sasaki, A., Yokote, K., Naitoh, T. et al. Metabolic surgery in treatment of obese Japanese patients with type 2 diabetes: a joint consensus statement from the Japanese Society for Treatment of Obesity, the Japan Diabetes Society, and the Japan Society for the Study of Obesity. *Diabetol Int* 13, 1–30 (2022).

<sup>35</sup> 当前中国肥胖专家共识与指南由官方发布的仅有《中国成人超重和肥胖症预防控制指南》与《中国学龄儿童青少年超重和肥胖预防与控制指南》。文件由卫生部疾病预防控制局发布

<sup>36</sup> 英国国家卫生与临床优化研究所， Obesity: identification, assessment and management, <https://www.nice.org.uk/guidance/cg189>

制定者制定全面有效的肥胖管理和公共健康干预策略，提供了科学依据。

**三是缺乏肥胖临床规范诊疗路径。**我国目前尚无官方认可的权威肥胖临床规范诊疗路径。当前美国肥胖临床规范主要参考由美国临床内分泌协会（AACE）、美国内分泌学会（ACE）近期发布的 2016 肥胖临床实践指南<sup>37</sup>。该文件对肥胖的诊治做了多角度的详细划分与阐释，为肥胖诊疗规范化发展提供了依据与支持。

**四是肥胖诊疗学科发展及国家级跨学科肥胖诊疗中心/门诊建设欠缺。**新加坡中央医院建立了肥胖中心，团队涵盖多学科医生、心理咨询师、护士和药剂师等，为患有肥胖症及其相关代谢疾病的患者提供综合护理。该模式有助于加强肥胖诊疗学科建设，为患者提供更为全面、系统的肥胖管理服务。

**五是尚未形成国家范围的肥胖分级诊疗网络。**以英国三级诊疗体系为例，由全科医生/家庭医生首诊，地区性综合医院承担主要诊疗职能，头部专科医院和教学医院解决疑难杂症，各环节间双向转诊<sup>38</sup>。完善的诊疗网络为肥胖患者提供了全方位规范化的诊疗服务。

### （3）保障措施

与此同时，我国对于肥胖诊疗体系建设的相关保障措施也亟待建立与完善，并可参考相应国际实践经验。

**一是肥胖临床诊治能力提升相关资源投入不足。**当前中国暂时缺少针对肥胖诊治的专项资金与研究资源投入。美国在奥巴马任职总统期间出台了

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<sup>37</sup> 美国临床内分泌协会（American Association of Clinical Endocrinologists, AACE）. 2016 Clinical Practice Guideline and Algorithm for Medical Care of Patients with Obesity. <https://pro.aace.com/clinical-guidance/2016-clinical-practice-guideline-and-algorithm-medical-care-patients-obesity>

<sup>38</sup> 谢春艳,胡善联,何江江,等.整合保健:英国经验对我国社区卫生服务改革的启示[J].中国卫生政策研究,2012,5(9):40-44

针对肥胖的政策和行动方案<sup>39</sup>并提供了充足的资金支持，包括研究、教育、公共健康项目及相关医疗服务，为美国肥胖防治体系的建设与完善奠定了良好的基础<sup>40</sup>。

**二是肥胖相关临床教育不足。**当前肥胖相关临床教育尚未引起足够重视，高等医学教育课程中对肥胖学科相关内容涵盖有限，未能为肥胖症输送足够的全科医生人才，在肥胖相关的医疗继续教育方面也存在欠缺。英国国家医疗服务体系（NHS）在《NHS 长期计划》<sup>41</sup>中强调需要提高医护人员对肥胖诊治的理解，并组织开展有关肥胖症的医护人员培训，提升其患者管理水平，为肥胖防治体系的高效运转提供人力资源保障。

**三是针对肥胖患者诊疗的多层次的支付保障方案尚未成型。**当前，减重相关药物尚未纳入我国多层医疗保障体系建设范畴。在基本医保基金持续承压的背景下，亟需出台相关政策鼓励肥胖相关商业健康保险发展。在美国，部分商业医疗保险公司为肥胖相关药物提供保障方案，提升了肥胖患者对创新药品的可及性和可负担性。<sup>42</sup>

**四是缺乏官方权威的肥胖健康与诊疗信息发布平台。**当前公众对于肥胖诊疗知识认知不足，信息获取来源繁杂且准确性有限，缺乏具备公信力的官方机构发布肥胖相关知识，引导患者正确认知肥胖的疾病属性并及时就医。

## 二、政策建议

鉴于肥胖对我国经济和国民健康广泛与深远的影响，加强肥胖诊治能

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<sup>39</sup>美国疾病预防控制中心（CDC）设立专门的营养、身体活动和肥胖科室（DNPAO）提供资源，意在使所有人的健康生活更轻松。

<sup>40</sup> Youfa Wang, Health policy and public health implications of obesity in China, *The Lancet Diabetes & Endocrinology*, June 04, 2021, [https://doi.org/10.1016/S2213-8587\(21\)00118-2](https://doi.org/10.1016/S2213-8587(21)00118-2)

<sup>41</sup> NHS Long term Plan. <https://www.longtermplan.nhs.uk/>

<sup>42</sup> C Perdomo, R Cohen, et al, Contemporary medical, device, and surgical therapies for obesity in adults. *The Lancet*. 2023; 401:1116-30.

力建设，对于赋能我国现代化医疗卫生服务体系升级意义重大。结合中国当前肥胖防控体系建设成果，参考海外先进经验，建议首先从宏观战略入手，将其作为独立的疾病予以重视并发布专项行动；其次，加强肥胖诊治体系化能力建设；最后辅以全方位、多层次的保障措施，应对肥胖流行挑战。具体建议如下：

### （一）宏观战略

将肥胖作为独立的疾病，开展肥胖防治专项行动。世界肥胖联盟<sup>2</sup>于2020年在肥胖防治 ROOTS 框架中将“承认肥胖是一种疾病”作为解决肥胖问题的前提。《2021年世界肥胖调查》<sup>43</sup>显示，官方对肥胖的疾病地位缺乏认可可是肥胖治疗的主要障碍之一。世卫组织2022年发布的《加速计划》促进全球认识并解决日益严重的肥胖危机<sup>44</sup>。国家卫健委2019年颁布的中国《疾病分类代码国家临床版2.0》中<sup>45</sup>，脂肪增多、堆积及各类原因引起的肥胖症已被纳入，但社会各界对肥胖作为疾病认知仍然不足。

建议将肥胖作为独立的慢性疾病列入后续《健康中国行动计划》和《中国防治慢性病中长期规划》中。同时，由健康中国行动推进委员会主导，健康中国行动肥胖防控联盟<sup>46</sup>提供支持，在全国范围内统筹部署肥胖防治专项行动。鼓励各地各单位因地制宜，形成可持续推广的有效的做法和经验。

### （二）实施方案

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<sup>43</sup> 2021 in review: Global Obesity Observatory, World Obesity, 2021 in review: Global Obesity Observatory | World Obesity Federation

<sup>44</sup> World Health Organization. WHO acceleration plan to stop obesity. <https://www.who.int/publications/i/item/9789240075634>

<sup>45</sup> 国家卫生健康委员会，《疾病分类与代码国家临床版2.0》，<http://www.nhc.gov.cn/yzygj/s3593g/201904/b8323261bb8a4175a2046d2fffa93936.shtml>

<sup>46</sup> 健康中国行动肥胖防控联盟，是接受健康中国行动推进办业务指导的“开放合作系统”，在由健康中国行动推进委员会办公室指导、中国家庭报社主办、首都体育学院联合主办、家庭报文化发展有限公司承办，诺和诺德中国公益支持的“健康城市，健康体重”2022年肥胖防控活动中成立，主要职责为面向社会深入开展调研工作，结合肥胖防控现状广泛整合各方专家意见等。

立足国家肥胖战略定位，从设立专业学会、制定肥胖诊疗指南、规范临床诊疗路径、建设肥胖诊疗中心和构建肥胖分级诊疗网络等方面入手，建立并完善肥胖诊治体系。

### 1. 设立专业学会

设立肥胖临床诊疗专业学会，引领行业规范和学科发展。建依托中华医学会平台设立肥胖症分会，由具备行业影响力和权威的专家组成，开展前沿临床研究和肥胖诊疗相关实践，助力中国应对肥胖流行的挑战。专业学会也将承担国际交流职能，在学习前沿经验的同时提升我国肥胖诊治实践的国际影响力。

### 2. 制定诊治指南

由专业学会主导、政府背书，形成权威的肥胖诊治指南。结合最新的研究数据与实践经验，整合现有肥胖诊治指南与专家共识，为肥胖及相关慢性疾病的分级诊疗提供可操作的专业指引。指南完稿后，由学会主导发布，官方渠道转发宣传，并合作开展巡讲答疑等活动，提升指南的普及度与临床应用。

### 3. 规范临床路径

在政府主导下，成立医疗专家委员会，构建规范化肥胖临床诊疗路径。由官方牵头组建专家委员会，集合临床经验及医疗管理经验，形成标准化的肥胖临床诊疗路径，全面涵盖生活方式干预、药物治疗和手术治疗。同时为多学科肥胖管理模式的开展提供标准参考，包含多学科诊疗适用的患者评估、全周期诊疗流程、多维度治疗模式应用和长期随访等。

### 4. 建设跨学科诊疗中心

鼓励建立多种类型的国家级跨学科肥胖门诊或诊疗中心。2022年，国

家卫健委发布了《国家内分泌代谢病医学中心及国家内分泌代谢病区域医疗中心设置标准》<sup>47</sup>，将内分泌代谢疾病诊疗和管理提升到国家战略高度。建议基于双中心政策，考虑医院差异化特色和资源，设立多学科肥胖诊疗中心和肥胖门诊。跨学科诊疗中心可参考北京中日友好医院普外科代谢减重中心，该中心是全国第一家针对肥胖糖尿病患者进行全方位诊断、内外科综合治疗及生活方式指导的临床医学中心；也可参考上海交大医学院附属仁济医院肥胖症多学科诊疗平台，联合多个内外科相关科室，为肥胖症患者提供规范化、个性化的综合诊治和全方位管理。肥胖门诊开设难度相对较低，可参考厦门大学附属第一医院内分泌糖尿病科肥胖学组的“三师共管”医学减重和“一站式”减重门诊模式，该医院也是全国百佳医学营养减重教学基地。

## 5. 构建肥胖分级诊疗网络

构建国家-省-地市-县四级肥胖分级诊疗网络，从国家到基层医疗机构形成一体化管理体系。参考国家卫健委七大慢性疾病分级诊疗技术方案，设计包括分级机构功能定位，分级诊疗服务路径，转诊标准，患者诊断评估和患者管理的肥胖分级诊疗网络方案。以冠心病为例，分级诊疗技术方案中强调多学科合作的全程管理，县域级医疗机构通过规范化治疗，长期随访，生活方式干预等方式全程规范化管理。参考设计肥胖分级防治方案后可选择重点区域试点实施，建立监测和评估调整机制。

### （三）保障措施

#### 1. 增加资源投入

加强肥胖诊治能力建设相关资金投入和资源保障。建议由政府主导，

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<sup>47</sup> 国家健康委员会. 关于印发国家内分泌代谢病医学中心及国家内分泌代谢病区域医疗中心设置标准的通知. <http://www.nhc.gov.cn/cms-search/xxgk/getManuscriptXxgk.htm?id=c58176a4e56348a5880ac460c306ae53>



设立专项资金，支持肥胖诊治相关研究和实践项目。同时，在课题申报、创新服务开展、基础设施建设等方面予以支持，为肥胖诊治能力提升保驾护航。

## **2.重视人才培养**

**加强肥胖诊治相关教育，完善肥胖诊治人员培养体系。**一是在高校临床医学、全科医学教材中加入肥胖诊治内容，扩大肥胖相关人才储备。参考复旦大学临床医学院 2022-2023 学年《肥胖医学》专业选修课程，其课程设置内容覆盖全面，旨在令学生掌握肥胖医学基础与实践基本原则，了解多学科合作在肥胖治疗中的意义及肥胖治疗技术的最新进展。二是为医护人员提供继续教育培训，扩大专业服务队伍，提升专业人员对肥胖的认知和诊疗服务质量。三是为教师及社区工作人员提供肥胖相关知识培训，建立肥胖监测与持续管理的意识。

## **3.完善支付体系**

**提供与肥胖诊治配套的支付保障。**探索建立符合肥胖诊疗性质的多层次医疗保障体系，特别是通过政策制度鼓励商业保险公司加快发展肥胖相关商业健康保险及惠民保，研究扩大保险责任对创新型肥胖诊疗手段的覆盖，丰富肥胖相关健康保险产品供给，促进患者获得创新高效治疗。

## **4.加强社会认知**

**加强患者对肥胖的认知，提升肥胖科普与就医信息权威性和普及度。**结合 3 月 4 日世界肥胖日、5 月 11 日世界防治肥胖日及 9 月 1 日全民健康生活方式日等疾病宣传日，由官方媒体开展肥胖相关知识科普，包括但不限于官方媒体宣传、直播互动答疑、社区宣讲活动等。

## **三、结语**

加强肥胖诊治体系与能力建设是中国应对肥胖流行趋势、赋能现代化医

疗卫生体系的关键，需要社会各界的共同努力携手合作。作为全球领先的生物制药公司，自 1923 年在丹麦建立以来，诺和诺德持续聚焦于糖尿病、肥胖症等严重慢性疾病，通过引领科研突破、扩大药物可及性，致力于预防并最终治愈疾病。2024 年是诺和诺德在华成立 30 周年，依托全球 80 个国家和地区的相关资源及 170 个市场的产品与管理经验，未来我们将持续加深与中国政府的合作，积极分享国际经验并为相关公共合作项目提供支持，共同助力实现健康中国 2030 战略。

# **Enhance the Capability for Obesity Diagnosis and Treatment, Empowering the Modern Medical and Health Service System**

CDF Engagement Initiative 2024

*Novo Nordisk (China) Pharmaceuticals Co., Ltd.*

*January 2024*

## **Executive Summary**

As socio-economic progress unfolds, obesity is becoming a global epidemic. Since 1975, the number of obese people worldwide has nearly tripled<sup>1</sup>. By 2035, the global obese population will reach 2 billion<sup>2</sup>. In the past 40 years, China has also experienced a rapid increase in the prevalence of overweight and obesity. It is estimated that by 2030, China's obese population will exceed 20% of its total population<sup>3</sup>.

Obesity's detrimental effects span across health, social, and economic sectors. As a chronic disease on its own and a significant contributor to various non-infectious chronic diseases, obesity is having a progressively intense impact globally. In 2019, deaths caused by overweight and obesity accounted for 11.1% of chronic non-infectious-disease-related deaths in China, a significant increase from 5.7% in

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<sup>1</sup> WHO, Obesity and Overweight, <https://www.who.int/zh/news-room/fact-sheets/detail/obesity-and-overweight>

<sup>2</sup> World Obesity Federation, World Obesity Atlas 2023, <https://www.worldobesity.org/resources/resource-library/world-obesity-atlas-2023>

<sup>3</sup> Wang Youfa, Sun Mingxiao, Yang Yuexin, etc. Blue Book on Obesity Prevention and Control in China [M]. Beijing: Peking University Medical Press, 2019

1990<sup>4</sup>. Overweight and obesity also have multiple negative impacts on social development. Overweight and obesity can lead to a decrease in female fertility. Among workers aged between 18-35 years old, the wages of obese workers are 22.4%<sup>5</sup> less than those of workers with a normal weight. At the same time, obesity also has an adverse impact on global economic development. In 2020, overweight and obesity had an economic impact<sup>6</sup> of up to USD1.96 trillion across the entire globe and USD283.31 billion in China. By 2035, the economic impact of overweight and obesity in China is projected to increase to USD1.27 trillion<sup>7</sup>.

With the escalating issue of obesity, the Chinese government has implemented a range of measures to prevent and control it, yielding positive outcomes. Viewing from a broad strategic standpoint, the Chinese government sees the prevention and control of obesity as crucial to safeguarding the health of its citizens. In the execution phase, the Chinese government has released a variety of guidelines pertaining to the criteria for determining obesity, intervention strategies, and expert consensus, and has undertaken research and monitoring of obesity to establish a strong foundation for its prevention and control. Moreover, other relevant departments, societies, and associations are also investigating additional protective measures.

Nonetheless, the existing strategies to combat obesity in China are still grappling with the issue of prioritizing ‘prevention over treatment’ and a lack of systematic treatment capabilities. Within the framework of national health strategy, obesity is yet to be recognized as a standalone disease, leading to an absence of dedicated preventive and control measures. The current execution plan reveals that information related to diagnosing and treating obesity is scattered, with a noticeable deficiency in systematic policy schemes. The shortfall in resources and skilled professionals, an inadequate payment assurance system, and the public’s limited understanding of the disease are all obstacles in the development of China’s capacity to diagnose and treat obesity.

To sum up, enhancing the capability for obesity diagnosis and treatment is of great significance for empowering the modern medical and health service system. This report, while referencing advanced overseas experiences and considering China’s current development conditions, proposes suggestions from the following three aspects:

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<sup>4</sup> B, Xiong Fei Pan A,P.L.W.C,and P.A.P.A. "Epidemiology and determinants of obesity in China"

<sup>5</sup> Centre for Economics, Finance and Management Studies of Hunan University, A Study on the Impact of Obesity on Wages of Chinese Workers, <https://www.sinoss.net/c/2022-04-15/622084.shtml>

<sup>6</sup> Here, economic impact includes both the healthcare costs of treating obesity and its consequences and the impact of high BMI on economic productivity, with high BMI contributing to

absenteeism, presenteeism (reduced productivity while at work), and premature retirement or death.

<sup>7</sup> Social and Economic Consequences of Overweight in Adolescence and Young Adulthood.

<https://www.nejm.org/doi/full/10.1056/nejm199309303291406>

## **1. Macro strategy**

**Regard obesity as an independent disease and initiate special action plans for obesity prevention and treatment.** Obesity should be included as an independent chronic disease in the *Healthy China Action Plan* and *China's Medium- and Long-Term Plan for Chronic Disease Prevention and Treatment*. In addition, a Healthy China Obesity Prevention and Treatment Committee should be established to coordinate national obesity prevention and control activities.

## **2. Implementation plan**

**Firstly, set up a professional institute for obesity clinical diagnosis and treatment to lead industry norms and discipline development.** The institute should be composed of experts with industry influence and authority, carrying out cutting-edge clinical research and practices related to obesity diagnosis and treatment.

**Secondly, develop an authoritative obesity diagnosis and treatment guide under the leadership of the professional institute and with the endorsement of the government.** Professional and operable guidance should be provided, combining the latest research data and practical experience while integrating existing guidelines and expert consensus.

**Thirdly, establish a medical expert committee under the leadership of the government to standardize the clinical pathway for obesity diagnosis and treatment.** Forming standardized clinical paths could provide a reference for the development of multidisciplinary obesity management models.

**Fourthly, encourage the establishment of various types of national-level interdisciplinary obesity treatment centers or clinics.** This could be facilitated by the construction of the National Endocrine Metabolic Disease Medical Center and the National Endocrine Metabolic Disease Regional Medical Center, encouraging all tertiary hospitals to set up different types of national-level interdisciplinary obesity outpatient clinics or treatment centers.

**Lastly, construct a four-tiered obesity diagnosis and treatment network, spanning national, provincial, city, and county levels.** An obesity prevention and treatment service system integrating all levels of medical institutions should be established to provide more scientific and comprehensive diagnosis, treatment, and management services for obese patients.

## **3. Supporting measures**

Firstly, strengthen the investment in funds and resource to bolster the development of capabilities in diagnosing and treating obesity.

Secondly, amplify the focus on education pertaining to obesity diagnosis and treatment, and refine the training framework for personnel in this field.

Thirdly, develop a comprehensive medical care system that aligns with the needs of obesity diagnosis and treatment.

Lastly, intensify efforts to improve patients' comprehension of obesity, and boost

the credibility and reach of information related to obesity awareness and medical knowledge.

Building up obesity diagnosis and treatment capacity requires the joint efforts and cooperation of all sectors of society. Novo Nordisk, as a global leading biopharmaceutical company, focuses on the prevention and treatment of serious chronic diseases such as diabetes and obesity. We hope to continue to deepen cooperation with the Chinese government in the future, continue to share international experience in obesity diagnosis and treatment, and provide support for related public cooperation projects, contributing to the realization of the strategic goals of Healthy China 2030.

## **I. Background**

### **i. Obesity as a trend**

**With the development of the social economy, obesity has become an important medical and social issue in recent years around the world.**

#### **1. Global obesity trends**

According to the World Health Organization (WHO) definition<sup>8</sup>, obesity is an abnormal or excessive fat accumulation that presents a risk to health. The prevailing measurement and determination method for obesity internationally is the Body Mass Index (BMI)<sup>9</sup>.

Since 1975, the number of obese people in the world has nearly tripled<sup>1</sup>. The World Obesity Atlas 2023 released by the World Obesity Federation (WOF) shows that the prevalence of obesity alone is anticipated to rise from 14% in 2020 to 24% of the global population by 2035, affecting nearly 2 billion adults, children, and adolescents<sup>2</sup>. In particular, the obesity rate of children and adolescents is rising fastest among all age groups.

#### **2. Obesity trends in China**

Based on the physical differences between the Chinese population and Europeans and Americans, the Working Group on Obesity in China (WGOC)<sup>10</sup> has set overweight and obesity criteria specific to the Chinese population: for adults,  $24 \leq \text{BMI} < 28$  is considered overweight, with  $\text{BMI} \geq 28$  being considered obese. Over the past 40 years, the overweight rate of adult residents in China was 34.3%, and the obesity rate was 16.4%; the obesity rate of children aged 6-17 years old was 7.9%, and the obesity rate of children under 6 years old was 3.6%.<sup>11</sup> By 2030, China's obese population will exceed 20% of its total population<sup>3</sup>.

### **ii. Impact analysis of the obesity trends**

**Nowadays, obesity has become a major public health issue, both globally and in China. Strengthening the obesity diagnosis and treatment system and building capacity has become one of the key initiatives for empowering medical**

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<sup>8</sup> WHO, Obesity and Overweight, <https://www.who.int/zh/news-room/fact-sheets/detail/obesity-and-overweight>

<sup>9</sup> Body Mass Index (BMI) is a simplified weight for height index, used in the determination of overweight and obesity for adults. It is a person's weight in kilograms divided by the square of height in meters ( $\text{kg}/\text{m}^2$ ). According to WHO's evaluation criteria of obesity and overweight for adults: overweight:  $\text{BMI} \geq 25$ ; obesity:  $\text{BMI} \geq 30$ . Children  $\leq 5$  years old: Overweight: Weight-for-height  $> 2$  standard deviations from the WHO median child growth standards; Obesity: Weight-for-height  $> 3$  standard deviations from the WHO median child growth standards.

<sup>10</sup> A working group under the World Obesity Federation (WOF) dedicated in the study and statistical disclosure of the obesity trend in the Chinese population.

<sup>11</sup> National Health Commission (NHC). Report on Nutrition and Chronic Disease Status of Chinese Residents (2020). People's Medical Publishing House, 2020

**and health systems.**

## **1. Global impact**

**Globally, the widespread prevalence of obesity across the world has brought about serious disease, economic, and social burdens, attracting widespread attention from the international community.**

### **(1) Diseases**

With the prevalence of around the world, the diseases caused by obesity are becoming increasingly severe. Obesity is a major risk factor for chronic non-infectious diseases such as type II diabetes, cardiovascular diseases, respiratory diseases, musculoskeletal diseases, various types of cancers<sup>12</sup>, and depression. In addition, obesity is also the metabolic disease causing the most fatalities<sup>13</sup>. In 2019, the number of deaths caused by obesity in the world reached 5 million<sup>11</sup>.

### **(2) Social burden**

Overweight and obesity negatively impact people's social lives. The premature death and disability potentially caused by obesity have resulted in a decrease in population life expectancy. Research conducted in the UK indicates that overweight and obesity conditions could potentially shorten one's lifespan by a range of 3 to 10 years<sup>14</sup>. Moreover, obesity has many negative effects on family life. A 7-year study in the UK found that, compared with healthy individuals, overweight women spent 0.3 fewer years in school, had a 20% lower likelihood of getting married, had an annual family income that was USD 6,710 lower, and were 10% more likely to fall into poverty<sup>15</sup>.

### **(3) Economic burden**

Obesity and related diseases also have a negative impact on global economic development. Obesity and related diseases also negatively impact global economic development. The World Obesity Atlas 2023 indicates that overweight and obesity had a global economic cost of USD 1.96 trillion in 2020, accounting for 2.4% of the global GDP<sup>16</sup>. According to the current trend, the WOF predicts that the global economic impact caused by overweight and obesity will increase to USD 4.32 trillion by 2035, accounting for 2.9% of the global GDP.

## **2. Impact on China**

**In China, with the changes in residents' lifestyles brought about by economic and social development, there has been a swift rise in the number of individuals**

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<sup>12</sup> According to WHO, related cancers include endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon cancers.

<sup>13</sup> Nicholas W.S. Chew, Cheng Han Ng, Darren Jun Hao Tan, et al, The global burden of metabolic disease: Data from 2000 to 2019, *Cell Metabolism*, <https://www.sciencedirect.com/science/article/pii/S1550413123000396>

<sup>14</sup> NHS Information Centre (2010). <https://www.nhs.uk/conditions/obesity/>

<sup>15</sup> Social and Economic Consequences of Overweight in Adolescence and Young Adulthood. <https://www.nejm.org/doi/full/10.1056/nejm199309303291406>

<sup>16</sup> The monetary value refers to the value of US dollar in 2019.



**who are overweight or obese. This increase has considerably affected the national health socio-economic circumstances.**

(1) Diseases

Overweight and obesity, recognized as risk factors for major chronic non-infectious diseases, are associated with more than 200 diseases, including cancer, cardiovascular disease, diabetes, and kidney disease. The treatment processes for these diseases may exacerbate obesity, thereby creating a vicious cycle. Overweight and obesity were responsible for 11.1% of deaths related to chronic non-infectious diseases in 2019, marking a significant increase from 5.7% in 1990<sup>4</sup>.

(2) Social burden

The widespread prevalence of obesity in China has caused considerable damage to societal progress. There is a yearly increase in the rate of obesity among women in their reproductive years in China. Obesity can lead to hormonal and metabolic imbalances in these women, thereby diminishing their ability to conceive<sup>17</sup>. Obesity also affects male fertility, with the literature showing a negative correlation between male BMI and sperm parameters<sup>18</sup>. Furthermore, Obesity contributes to greater challenges in job acquisition for young individuals in their professional growth phase, and they are subjected to wage bias. Research indicates that obese workers between the ages of 18-35 earn 22.4% less than their counterparts with normal weight. For every unit increase in BMI beyond the obesity threshold, there is a 2.1% reduction in the hourly wage<sup>5</sup>.

(3) Economic burden

The World Obesity Atlas 2023<sup>2</sup> indicates that the economic consequences of overweight and obesity in China are projected to reach USD 283.31 billion in 2020, and are expected to rise to USD 1.27 trillion by 2035<sup>7</sup>. As per local statistics, the annual medical expenses related to overweight and obesity in China from 2000 to 2009 were approximately RMB 24.35 billion<sup>19</sup>. The economic burden resulting from overweight and obesity is predicted to hit RMB 418 billion by 2030, constituting 22% of China's total medical expenditure.<sup>20</sup>

**To sum up, the management of obesity has emerged as a crucial component of public health policies aimed at curbing the current and anticipated trends of obesity, and lessening the health, societal, and economic impacts it incurs.**

### **iii. How China is currently dealing with obesity**

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<sup>17</sup> Yufeng Liu, Yuyan Ma, Preconception assessment and pregnancy management of obese patients, Journal of Practical Obstetrics and Gynecology

<sup>18</sup> Nathalie Sermondade. Obesity and Increased Risk for Oligozoospermia and Azoospermia. <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/1108774>

<sup>19</sup> Qin X, Pan J. The Medical Cost Attributable to Obesity and Overweight in China: Estimation Based on Longitudinal Surveys. Health Econ. 2016 Oct;25(10):1291-311.

<sup>20</sup> Wang Y, Zhao L, Gao L, et al. Health policy and public health implications of obesity in China [J]. Lancet Diabetes Endocrinol, 2021, 9(7):446-461.

## 1. Progress in China's efforts to prevent and control obesity

**As obesity becomes more prevalent, the Chinese government has started to focus more on this issue, taking numerous preventive and controlling steps, resulting in notable progress.**

### (1) Macro strategy

From a macro-strategic perspective, the Chinese government regards obesity prevention and control as an crucial aspect of protecting the health of residents. In The State Council in *Notice on Issuing the 13<sup>th</sup> Five-Year Plan for Health and Wellness Planning*<sup>21</sup> in 2017, under the section for chronic diseases prevention and control, proposed a step-by-step process for risk assessment and intervention targeting individuals at high risk for chronic conditions such as obesity and overweight. The *Healthy China Action Plan (2019-2030)*<sup>22</sup> released in 2019 highlighted interventions for overweight and obese individuals in areas like dietary management, national fitness, maternal and child health, and disease management. Simultaneously, it included related public outreach programs in the key tasks of the *Healthy China Action Plan 2022-2023*. Furthermore, the *14<sup>th</sup> Five-Year Plan for National Health Planning*<sup>23</sup> released in 2022 placed emphasis on the crucial role of diagnosing and intervening obesity in children and teenagers, specifying them as the main demographic for obesity intervention.

### (2) Implementation plan

The Chinese government has issued guiding documents from multiple dimensions such as obesity determination criteria, intervention measures, expert consensus guidelines, and disease monitoring and research.

In terms of the obesity determination criteria, the National Health Commission (NHC) has issued *Adult Weight Determination Criteria*<sup>24</sup>, *Overweight and Obesity Screening for School-aged Children and Adolescents*<sup>25</sup>, and *Growth Standards for Children Under Seven*<sup>26</sup>, thereby specifying the diagnostic criteria for overweight and obesity across all age groups.

In terms of intervention measures, children and adolescents are the primary target

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<sup>21</sup> State Council, Notice on Issuing the 13<sup>th</sup> Five-Year Plan for Health and Wellness Planning, [https://www.gov.cn/zhengce/content/2017-01/10/content\\_5158488.htm?trs=1](https://www.gov.cn/zhengce/content/2017-01/10/content_5158488.htm?trs=1)

<sup>22</sup> Healthy China Action Promotion Committee, Healthy China Action Plan (2019-2030), <http://www.nhc.gov.cn/cms-search/xxgk/getManuscriptXxgk.htm?id=e9275fb95d5b4295be8308415d4cd1b2>

<sup>23</sup> General Office of the State Council, Notice on Issuing the 14<sup>th</sup> Five-Year Plan for National Health Planning, [https://www.gov.cn/zhengce/content/2022-05/20/content\\_5691424.htm](https://www.gov.cn/zhengce/content/2022-05/20/content_5691424.htm)

<sup>24</sup> NHC, Adult Weight Determination Criteria, <http://www.nhc.gov.cn/wjw/yinyang/201308/a233d450fdb47c5ad4f08b7e394d1e8.shtml>

<sup>25</sup> NHC, Overweight and Obesity Screening for School-aged Children and Adolescents, <http://www.nhc.gov.cn/wjw/pqt/201803/a7962d1ac01647b9837110bfd2d69b26.shtml>

<sup>26</sup> NHC, Growth Standards for Children Under Seven, <http://www.nhc.gov.cn/wjw/fyjk/202211/16d8b049fdf547978a910911c19bf389.shtml>

group, with lifestyle intervention being the main approach. The *Implementation Programme for Obesity Prevention and Control for Children and Adolescents*<sup>27</sup> defines the goal of preventing and controlling overweight and obesity in children and adolescents, and reaffirms the respective responsibilities of families, schools, medical and health institutions, and the government in obesity prevention and control. The *Core Information of Infant Feeding Education*<sup>28</sup> and the *Healthy Children Action Plan*<sup>29</sup> propose specific measures in terms of scientific feeding and exercise guidance, aimed at reducing the risk of obesity in infants, children, and adults.

In terms of expert consensus guidelines, the Bureau of Disease Prevention and Control of the National Health Commission released the first comprehensive prevention and treatment guidelines for adult obesity in 2003. Subsequently, various societies and associations have issued relevant documents in the fields of dietary nutrition, childhood obesity, weight loss surgery, comorbidities, and comprehensive obesity management. To date, there are more than twenty searchable guidelines and expert consensuses, providing the industry with scientific guidance and technical norms for the prevention and control of overweight and obesity.

In terms of disease monitoring and research, the Chinese Centre for Disease Control and Prevention led the dynamic monitoring of overweight and obesity from 2004 to 2018. Studies derived from the monitoring data<sup>30</sup> revealed varying patterns in obesity rates, influenced by three elements: gender, geographical location, and socioeconomic status. These insights serve as a dependable foundation for fine-tuning prevention and control strategies in a targeted manner, and for scientifically assessing the effectiveness of these strategies.

**2. Insufficient systematic approach to diagnosing and treating obesity in China**  
**Despite the numerous obesity prevention and lifestyle intervention actions carried out, the existing strategies to combat obesity in China are still grappling with the issue of prioritizing ‘prevention over treatment’ and a lack of systematic treatment capabilities.** Relevant international practical experience

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<sup>27</sup> Ministry of Education, General Administration of Market Regulation, General Administration of Sports, Central Committee of the Communist Youth League, All-China Women's Federation, Notice on the Publication of the Implementation Programme for Obesity Prevention and Control for Children and Adolescents. General Office of the National Health Commission (Zhi Kong Fa [2020] No. 16), [https://www.gov.cn/zhengce/zhengceku/2020-10/24/content\\_5553848.htm?eqid=da14706b0002496f00000005645d970f](https://www.gov.cn/zhengce/zhengceku/2020-10/24/content_5553848.htm?eqid=da14706b0002496f00000005645d970f)

<sup>28</sup> NHC, Notice on Issuing the Core Information of Infant Feeding Education, [https://www.gov.cn/zhengce/zhengceku/2020-08/01/content\\_5531915.htm](https://www.gov.cn/zhengce/zhengceku/2020-08/01/content_5531915.htm)

<sup>29</sup> NHC, Notice on Issuing the Healthy Children Action Plan (2021-2025). [https://www.gov.cn/zhengce/zhengceku/2021-11/05/content\\_5649019.htm](https://www.gov.cn/zhengce/zhengceku/2021-11/05/content_5649019.htm)

<sup>30</sup> Body-mass index and obesity in urban and rural China: findings from consecutive nationally representative surveys during 2004–18

could be used for reference.

#### (1) Macro strategy

Within the framework of national health strategy, obesity is yet to be recognized as a standalone disease, leading to an absence of dedicated preventive and control measures. Currently, obesity-related strategies are typically discussed in the context of chronic disease prevention and treatment, adolescent and child health, and dietary management and fitness activities for residents. Even though overweight and obesity have been incorporated into national health planning, the emphasis of current policies is more on prevention than treatment. In terms of international practices for obesity prevention and treatment, WHO has consecutively released the *Follow-up to the political declaration of the third high-level meeting of the General Assembly on the prevention and control of non-communicable diseases*<sup>31</sup> and the *Health service delivery framework for prevention and management of obesity*<sup>32</sup> in 2022 and 2023. These documents encourage member countries to systematically develop obesity prevention and treatment strategies and related implementation frameworks. The Australian Medical Association has recognized obesity as a standalone disease, and the Australian Government released the *National Obesity Strategy 2022–2032*<sup>33</sup> in 2022. This strategy aims to provide guidance to the public for early intervention and mitigation of obesity.

#### (2) Implementation plan

The current implementation plan reveals that information related to diagnosing and treating obesity is scattered, with a noticeable deficiency in systematic policy schemes.

**Firstly, there is a lack of professional institute for obesity clinical diagnosis and treatment.** Currently in China, there is no professional association specifically for obesity that can provide guidance for obesity prevention and control nationwide. Existing related associations are mostly local associations or branches of comprehensive associations, such as the Weight Loss and Metabolism Specialist Physicians Branch of the Beijing Medical Association. In Japan, specialized obesity associations include the Japan Society for the Study of Obesity (JASSO) and the Japanese Society for Treatment of Obesity (JSTO)<sup>34</sup>, which provide guidance to all

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<sup>31</sup> Follow-up to the political declaration of the third high-level meeting of the General Assembly on the prevention and control of non-communicable diseases. Geneva: World Health Organization. 27 April 2023.

<sup>32</sup> Health service delivery framework for prevention and management of obesity. Geneva: World Health Organization. 2023.

<sup>33</sup> National Obesity Strategy 2022–2032. Australia Government, Department of Health and Aged Care. <https://www.health.gov.au/resources/publications/national-obesity-strategy-2022-2032?language=en>

<sup>34</sup> Sasaki, A., Yokote, K., Naitoh, T. et al. Metabolic surgery in treatment of obese Japanese patients with type 2 diabetes: a joint consensus statement from the Japanese Society for Treatment of Obesity, the Japan Diabetes Society, and the Japan Society for the Study of Obesity. *Diabetol Int* 13, 1–30 (2022).

<https://doi.org/10.1007/s13340-021-00551-0>

sectors of society in areas such as obesity monitoring, treatment, lifestyle improvement, and continuing education in obesity medicine.

**Secondly, authoritative guidelines for obesity diagnosis and treatment are lacking.** The officially released documents<sup>35</sup> currently only cover the prevention and control of obesity in adults and adolescents, with no authoritative guidelines on obesity diagnosis and treatment available at present. As a key component of the British health system, the National Institute for Health and Care Excellence (NICE) endorsed and released the clinical guidelines for obesity in 2022, titled *Obesity: Identification, Assessment and Management*<sup>36</sup>. These guidelines represent the most recent and comprehensive official guidelines for obesity diagnosis and treatment in the UK, providing a scientific foundation for medical institutions, practitioners, and policymakers to develop comprehensive and effective strategies for obesity management and public health intervention.

**Thirdly, a standardized clinical diagnosis and treatment path for obesity is absent.** Currently, China does not have an officially accepted and standardized clinical pathway for diagnosing and treating obesity. The current U.S. clinical standards for obesity mainly draw from the 2016 obesity clinical guidelines published by the American Association of Clinical Endocrinologists (AACE) and the American College of Endocrinology (ACE)<sup>37</sup>. These guidelines present a comprehensive and multi-dimensional classification and illustration of obesity diagnosis and treatment, laying the groundwork and backing for the standardized progression of obesity diagnosis and treatment.

**Fourthly, the disciplines of obesity diagnosis and treatment are underdeveloped, and there is a scarcity of national-level interdisciplinary obesity diagnosis and treatment centers/clinics.** Singapore General Hospital has established an Obesity Centre. This center is staffed by a multidisciplinary team of doctors, psychological consultants, nurses, and pharmacists, all working together to provide comprehensive care to patients with obesity and related metabolic diseases. This model serves to enhance the discipline of obesity diagnosis and treatment, offering more comprehensive and systematic obesity management services for patients.

**Lastly, a nationwide network for tiered diagnosis and treatment of obesity has**

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<sup>35</sup> The only guidelines and consensus among Chinese obesity experts published officially are Guidelines for the Prevention and Control of Overweight and Obesity in Chinese Adults and Guidelines for the Prevention and Control of Overweight and Obesity in Chinese School-aged Children and Adolescents. These documents were published by the Disease Prevention and Control Bureau under the Ministry of Health

<sup>36</sup> NICE, Obesity: identification, assessment and management, <https://www.nice.org.uk/guidance/cg189>

<sup>37</sup> American Association of Clinical Endocrinologists, AACE. 2016 Clinical Practice Guideline and Algorithm for Medical Care of Patients with Obesity. <https://pro.aace.com/clinical-guidance/2016-clinical-practice-guideline-and-algorithm-medical-care-patients-obesity>

**not yet been established.** Taking the three-tiered diagnosis and treatment system in the UK as an example, general practitioners/family doctors conduct the initial diagnosis. Regional general hospitals assume the primary diagnosis and treatment responsibilities, while leading specialized hospitals and teaching hospitals address complex and rare diseases. A two-way referral system has been established between these institutions<sup>38</sup>. This sophisticated diagnosis and treatment network provides comprehensive and standardized diagnosis and treatment services for patients with obesity.

### (3) Supporting measures

Meanwhile, the supporting measures for the construction of China's obesity diagnosis and treatment system urgently need to be established and improved and can refer to corresponding international practical experience.

**Firstly, the resources available for the improvement of obesity clinical diagnosis and treatment capabilities are insufficient.** Firstly, the resources available for the improvement of obesity clinical diagnosis and treatment capabilities are insufficient. Currently, China is short of special funds and research resources for obesity diagnosis and treatment. During the eight years of Barack Obama's presidency, the United States government introduced policies and action plans<sup>39</sup> against obesity and provided adequate financial support for obesity-related research, education, public health programs, and medical services, laying a solid foundation for the development of the obesity prevention and treatment system in the United States.<sup>40</sup>

**Secondly, there is a lack of obesity-related clinical education.** Currently, obesity-related clinical education is not receiving sufficient attention. The curriculum in higher medical education has limited content related to obesity, which results in a shortage of general practitioners to tackle the widespread issue of obesity. Additionally, there is a lack of continuing medical education pertaining to obesity. The *NHS Long-term Plan*<sup>41</sup> issued by UK's National Health Service (NHS) emphasizes the need to enhance medical staff's understanding of obesity diagnosis and treatment. The NHS also organizes training related to obesity for medical staff to improve their patient management skills, providing high-quality human resources for the efficient functioning of the obesity prevention and control system.

**Thirdly, a multi-level payment system for the diagnosis and treatment of obese**

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<sup>38</sup> Xie Chunyan, Hu Shanlian, He Jiangjiang, et al. Integrated Health Care: Inspiration from the British Model on the Community Health Service Reform in China [J]. *China Health Policy Research*, 2012,5(9):40-44

<sup>39</sup>Centers for Disease Control and Prevention (CDC) established the Division of Nutrition, Physical Activity, Obesity (DNPAO) to provide resources, with an aim to make people live easier and healthier.

<sup>40</sup> Youfa Wang, Health policy and public health implications of obesity in China, *The Lancet Diabetes & Endocrinology*, June 04, 2021, [https://doi.org/10.1016/S2213-8587\(21\)00118-2](https://doi.org/10.1016/S2213-8587(21)00118-2)

<sup>41</sup> NHS Long term Plan. <https://www.longtermplan.nhs.uk/>

**patients has not yet been formed.** Since obesity is not yet recognized as a disease in China, weight-loss drugs are not included in the medical insurance system. In contrast, in the United States, some commercial medical insurance companies offer coverage for several obesity-related drugs. This has enhanced the accessibility and affordability of innovative medications for patients with obesity.<sup>42</sup>

**Fourthly, there is a lack of an official and authoritative obesity-focused health and diagnosis and treatment information platform.** At present, there is a deficiency in the public's understanding of obesity diagnosis and treatment. The information sources are diverse but often lack precision. Besides, there is an absence of trustworthy official bodies to disseminate knowledge about obesity and offer suitable advice to patients in need of medical assistance.

## **II. Policy suggestion**

**Given the widespread and profound impact of obesity in China's economy and public health, strengthening the capacity for obesity diagnosis and treatment is of great significance for empowering the modern medical and health service system.** Combining the current achievements of China's obesity prevention and control system construction and referring to the advanced experience of overseas obesity diagnosis and treatment, **it is suggested to start with a macro strategy, regard it as an independent disease, and roll out specific action plans to steer subsequent policy execution. Furthermore, the systematic enhancement of obesity diagnosis and treatment capabilities should be prioritized; ultimately, all-encompassing and multi-tiered support measures should be implemented to address the obesity epidemic.** Detailed recommendations are as follows:

### **i. Macro strategy**

**Regard obesity as an independent disease and initiate special action plans for obesity prevention and treatment.** In the ROOTS framework for obesity prevention and control, established by its members in 2020<sup>2</sup>, the World Obesity Federation emphasized that acknowledging obesity as a disease is a fundamental step towards addressing the issue of obesity. The 2021 Global Obesity Observatory<sup>43</sup> indicates that the absence of official recognition of obesity as a disease significantly hinders its treatment. WHO published Acceleration Plan in 2022 to emphasize the obesity crisis and stimulate multi-sector country level action across the globe<sup>44</sup>. In the *Disease Classification and Code (National Clinical*

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<sup>42</sup> C Perdomo, R Cohen, et al, Contemporary medical, device, and surgical therapies for obesity in adults. *The Lancet*. 2023; 401:1116-30.

<sup>43</sup> 2021 in review: Global Obesity Observatory, World Obesity, 2021 in review: Global Obesity Observatory | World Obesity Federation

<sup>44</sup> World Health Organization. WHO acceleration plan to stop obesity. <https://www.who.int/publications/i/item/9789240075634>

*Version 2.0*)<sup>45</sup> issued by China’s National Health Commission (NHC) in 2019, obesity—resulting from fat increase or accumulation, among other causes—has been included in the disease classification code. However, most people still do not perceive obesity as a disease.

It is suggested to start from the strategic height of enhancing obesity prevention and control, and include obesity as an independent chronic disease in the subsequent *Healthy China Action Plan* and China's Medium- and Long-Term Plan for the Prevention and Management of Chronic Diseases. In addition, special actions for obesity prevention and control should be launched and coordinated nationwide under the leadership of the Healthy China Action Promotion Committee, and with support from the Healthy China Action Alliance for Obesity Prevention and Control<sup>46</sup>. It is recommended that for different locations and entities to tailor their approaches to their unique circumstances, thereby developing efficient methods and experiences that can be consistently implemented and shared.

## **ii. Implementation plan**

**In alignment with the national obesity strategy, our approach should begin with establishing professional societies, formulating obesity diagnosis and treatment guidelines, standardizing clinical diagnosis and treatment pathways, building obesity diagnosis and treatment centers, and constructing a graded diagnosis and treatment network for obesity. This will aid in the construction and enhancement of the system for diagnosing and treating obesity**

### **1. Establish professional institutions**

**Set up a professional institute for obesity clinical diagnosis and treatment to lead industry norms and discipline development.** We propose the establishment of a branch dedicated to obesity under the Chinese Medical Association. This branch would be composed of influential industry experts tasked with conducting advanced clinical research and implementing practices related to the diagnosis and treatment of obesity. This would aid China in addressing its obesity challenges. These professional institutions would also participate in international exchanges to learn from global best practices, thereby enhancing the international impact of China’s obesity diagnosis and treatment practices.

### **2. Develop obesity diagnosis and treatment guidelines**

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<sup>45</sup> NHC, Disease Classification and Code (National Clinical Version 2.0),

<http://www.nhc.gov.cn/yzygj/s3593g/201904/b8323261bb8a4175a2046d2fffa93936.shtml>

<sup>46</sup> Healthy China Action Alliance for Obesity Prevention and Control is an open cooperation system guided by the Healthy China Action Promotion Office. It was established in the “Healthy City, Healthy Weight” Obesity Prevention and Control 2022 event held under the guidance of the Healthy China Action Promotion Office and hosted by the China Family Newspaper, co-hosted by the Capital Sports Institute, organized by the Family Newspaper Cultural Development Co., Ltd. and supported by Novo Nordisk China. Its main responsibilities include conducting in-depth research and survey and consolidating expert opinions from different parties based on the current obesity prevention and control situation.



**Develop an authoritative obesity diagnosis and treatment guide under the leadership of the professional institute and with the endorsement of the government.** Professional and actionable guidance should be provided, which combines the latest research data with practical experience, while integrating existing guidelines and expert consensus for the tiered diagnosis and treatment of obesity and related chronic diseases. Once the guide is finalized, it should be published by professional institutions, and disseminated and promoted through official channels. Activities such as lecture tours and Q&A sessions should be conducted to enhance the reach and utilization of the guide.

### **3. Standardize the clinical pathway**

**Establish a medical expert committee under the leadership of the government to standardize the clinical pathway for obesity diagnosis and treatment.** The government should establish an expert committee tasked with developing standardized clinical diagnosis and treatment pathways. These pathways should encompass lifestyle intervention, medication, and surgery, and be informed by consolidated clinical and medical management experiences. The committee should also provide standardized references to facilitate the adoption of a multidisciplinary obesity management model. This model would include patient assessments suitable for multidisciplinary diagnosis and treatment, comprehensive diagnosis and treatment processes, a multi-dimensional treatment approach, and long-term follow-ups.

### **4. Build interdisciplinary obesity clinics or treatment centers**

**Encourage the establishment of various types of national-level interdisciplinary obesity clinics or treatment centers. In 2022, the National Health Commission promulgated the *Standard Settings for National Endocrine and Metabolic Disease Medical Centers and National Endocrine and Metabolic Disease Regional Medical Centers*<sup>47</sup>,** thereby raising the diagnosis, treatment, and management of endocrine and metabolic diseases to a national strategic priority. It is suggested that based on the dual-center policy, considering the differentiated characteristics and resources of hospitals, multi-disciplinary obesity diagnosis and treatment centers and obesity clinics should be established. The interdisciplinary treatment center could look to the General Surgery and Metabolic Weight Loss Center of Beijing China-Japan Friendship Hospital as a model. This center is the nation's first clinical medical center to offer comprehensive diagnosis, combined surgical and non-surgical treatment, and lifestyle guidance for obese diabetic patients. It can also refer to the multi-disciplinary diagnosis and treatment platform for obesity at Renji Hospital affiliated to Shanghai Jiaotong University School of

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<sup>47</sup> NHC. Notice on Issuing Standard Settings for National Endocrine and Metabolic Disease Medical Centers and National Endocrine and Metabolic Disease Regional Medical Centers. <http://www.nhc.gov.cn/cms-search/xxgk/getManuscriptXxgk.htm?id=c58176a4e56348a5880ac460c306ae53>

Medicine, which cooperates with multiple related departments of internal and external medicine to provide standardized, personalized comprehensive diagnosis and treatment and all-round health management for patients with obesity. Establishing an obesity clinic is comparatively less challenging. It could draw ideas from the co-management medical weight loss and one-stop weight loss outpatient model used by the Obesity Study Group in the Endocrinology and Diabetes Department of the First Affiliated Hospital of Xiamen University. This hospital ranks among the country's top 100 medical nutrition weight loss teaching bases.

#### **5. Construct a four-tiered obesity diagnosis and treatment network**

**Construct a four-tiered obesity diagnosis and treatment network, spanning national, provincial, city, and county levels.** Drawing upon the technical plan for the graded diagnosis and treatment of the seven major chronic diseases outlined by the National Health Commission, a structured diagnosis and treatment network plan for obesity could be developed. This plan encompasses the role definition of various levels of institutions, the pathway for graded diagnosis and treatment, standards for referrals, assessment of patient diagnosis, and patient management. Using coronary heart disease as a reference, the technical scheme for graded diagnosis and treatment underscores the importance of collaboration across various disciplines throughout the entire management process. Medical management institutions at the county level administer the entire process in a standardized manner, which includes standardized treatment, ongoing follow-ups, and lifestyle interventions. After considering the design of the graded prevention and treatment plan for obesity, specific regions can be chosen for initial implementation. Additionally, a system for monitoring and evaluation can be set up and modified as needed.

### **iii. Supporting measures**

#### **1. Strengthen the investment in funds and resource**

**Strengthen the investment in funds and resource to bolster the development of capabilities in diagnosing and treating obesity.** It is suggested that the government should take the lead, set up special funds, and support the smooth progress of research and practice projects related to obesity diagnosis and treatment. At the same time, support should be given in aspects such as project application, innovation service development, and infrastructure construction to ensure the improvement of obesity diagnosis and treatment capabilities.

#### **2. Prioritize talent cultivation**

**Amplify the focus on education pertaining to obesity diagnosis and treatment, and refine the training framework for personnel in this field.** Firstly, the proposal is to integrate content related to the diagnosis and treatment of obesity into the curriculum of clinical and general medicine in universities, thereby broadening the pool of expertise in this field. This approach is exemplified by the elective course "Obesity Medicine" offered at Fudan University's School of Clinical

Medicine for the 2022-2023 academic year. The comprehensive curriculum of this course is designed to equip students with a fundamental understanding of obesity medicine, its practical applications, the importance of a multidisciplinary approach to obesity treatment, and to keep them abreast of the latest advancements in obesity treatment methodologies. Secondly, The suggestion is to offer ongoing educational programs for healthcare professionals, with the aim of not only enlarging the team of specialists but also enhancing their comprehension of obesity and elevating the standard of services provided in the diagnosis and treatment of obesity. Lastly, The recommendation is to provide obesity-related knowledge training for teachers and community workers to establish awareness of obesity monitoring and continuous management.

### **3. Develop a comprehensive medical care system**

**Develop a comprehensive medical care system that aligns with the needs of obesity diagnosis and treatment.** On the premise of acknowledging obesity as a disease, there's a need to establish a multi-tiered medical insurance system that is in sync with the diagnosis and treatment of obesity. The government could offer policy incentives to stimulate commercial insurance companies to devise insurance products related to obesity. This would effectively bridge the gap in medical payment security for patients suffering from obesity.

### **4. Enhance social awareness**

**Intensify efforts to improve patients' comprehension of obesity, and boost the credibility and reach of information related to obesity awareness and medical knowledge.** On days such as World Obesity Day on March 4th, World Obesity Prevention Day on May 11<sup>th</sup>, and National Healthy Lifestyle Day on September 1st, along with other similar health awareness days, it is recommended that official media channels carry out public education on obesity-related knowledge. This includes, but is not limited to, official media promotion, live interactive Q&A sessions, and community lecture activities.

## **III. Conclusion**

Enhancing the capacity for diagnosing and treating obesity is crucial for China to address the growing obesity epidemic and to strengthen its modern healthcare system. This requires the collective effort and collaboration of all societal sectors. Novo Nordisk, a leading global biopharmaceutical company established in Denmark in 1923, has consistently concentrated on severe chronic diseases such as diabetes and obesity. The company is dedicated to preventing and ultimately eradicating these diseases through pioneering scientific research and increased accessibility to medication. 2024 is our 30<sup>th</sup> anniversary of development in China and leveraging Novo Nordisk's resources across 80 countries and regions worldwide, and its product and management expertise in 170 markets, we will persist in deepening our collaboration with the Chinese government. We will

actively share international experiences and offer support for relevant public cooperative projects, jointly contributing to the realization of the Healthy China 2030 strategy.